CHAPTER 3

AFFECTED ENVIRONMENT

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER 3 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter describes the existing environment, including the physical environment, natural environment, and human-made resources and uses, which would be affected by either the Proposed Action or the Action Alternatives. The alternative with the largest amount of disturbance is the Proposed Action and all other alternatives would occur within that larger footprint. The description of the existing environment for each resource in this chapter includes the largest area of potential disturbance.

3.1.1 Tiering and Incorporation by Reference

As stated in **Chapter 1**, this EIS tiers to the 2007 FEIS (BLM and USFS 2007) and uses as much information as possible from that document as applicable to the proposed Project. A CD version of the 2007 FEIS has been included as part of this EIS for ease of reference. Much of Chapter 3 of the 2007 FEIS provides general information about existing conditions in the Project Area. That information is generally not repeated in the sections following. Rather, where specific sections of **Chapter 3** are tiered to the 2007 FEIS, the text is incorporated by reference or briefly summarized for some resources, followed by any specific Project-related information. Any new data collected for this EIS, which was not contained in the 2007 FEIS, is clearly identified.

3.1.2 Resource Values and Uses Brought Forward for Analysis

Because this EIS is tiered to the 2007 FEIS, all resources analyzed in that document are analyzed in this EIS as well. Therefore, the following resources and uses are brought forward for analysis and are presented in this chapter.

- Geology Minerals, and Topography, presented in **Section 3.2**
- Air Resources and Noise, presented in **Section 3.3**
- Water Resources, presented in **Section 3.4**
- Soils, presented in **Section 3.5**
- Vegetation, presented in **Section 3.6**
- Wetlands, presented in **Section 3.7**
- Wildlife Resources, presented in **Section 3.8**
- Fisheries and Aquatics, presented in **Section 3.9**
- Grazing Management, presented in **Section 3.10**
- Recreation and Land Use, presented in **Section 3.11**
- IRAs, presented in **Section 3.12**
- Visual and Aesthetic Resources, presented in **Section 3.13**
- Cultural Resources, presented in **Section 3.14**
- Native American Concerns and Treaty Rights Resources, presented in **Section 3.15**
- Transportation, presented in **Section 3.16**
- Social and Economic Resources, presented in **Section 3.17**, and
- Environmental Justice, presented in **Section 3.18**.

3.1.3 General Setting of the Project Area

The Project Area (the area that would be directly impacted by the Project) is located within the large-scale ecological unit called the Webster Ridges & Valleys subsection discussed in the EIS for the CNF RFP (USFS 2003b). The Webster Ridges & Valleys subsection occurs at low-to-high elevations with slopes ranging from 10 to 65 percent. This landscape includes mountainsides, canyons, ridges, and valleys eroded from sedimentary rocks that are folded in generally north-south trending patterns.

In general, the climate of the Project Area is typical of Rocky Mountain areas influenced by major topographic features. Nearby mountain ranges (e.g. Snowdrift Mountain and Freeman Ridge) trend primarily north to south and have an impact on local winds, as well as temperature and precipitation patterns in the immediate area. Based on the Smoky Canyon Mine's SWPPP, the annual precipitation in the vicinity of the Smoky Canyon Mine is 30-35 inches (Simplot Agribusiness 2004).

Summers tend to be warm to hot and are typically dry and winters are typically cold and the ground cover is snow packed. Nearby Afton, Wyoming has a mean monthly average temperature of 61.7 degrees Fahrenheit (F) in July and a mean monthly average temperature of 16.4 degrees F in January (WRCC 2004).

3.1.4 Analysis Area

The analysis area varies by resource value or use, depending on the geographic extent of the resource or use and the extent of the effects of the Project on a resource or use. In some cases the analysis area is the Project Area because that is the extent of the effects of the Project on the resource. In other cases the analysis area is much larger, encompassing larger administrative or natural boundaries, because the effects on the resource extend beyond the Project Area boundary itself. Analysis areas for all resources were covered within the Study Areas described for each resource in the 2007 FEIS. However, for some resources, additional field surveys and/or information was updated from previously collected and presented data described in the 2007 FEIS. This updated and/or newly collected data is presented in the applicable resource sections in this chapter.

3.2 GEOLOGY, MINERALS, TOPOGRAPHY, AND PALEONTOLOGY

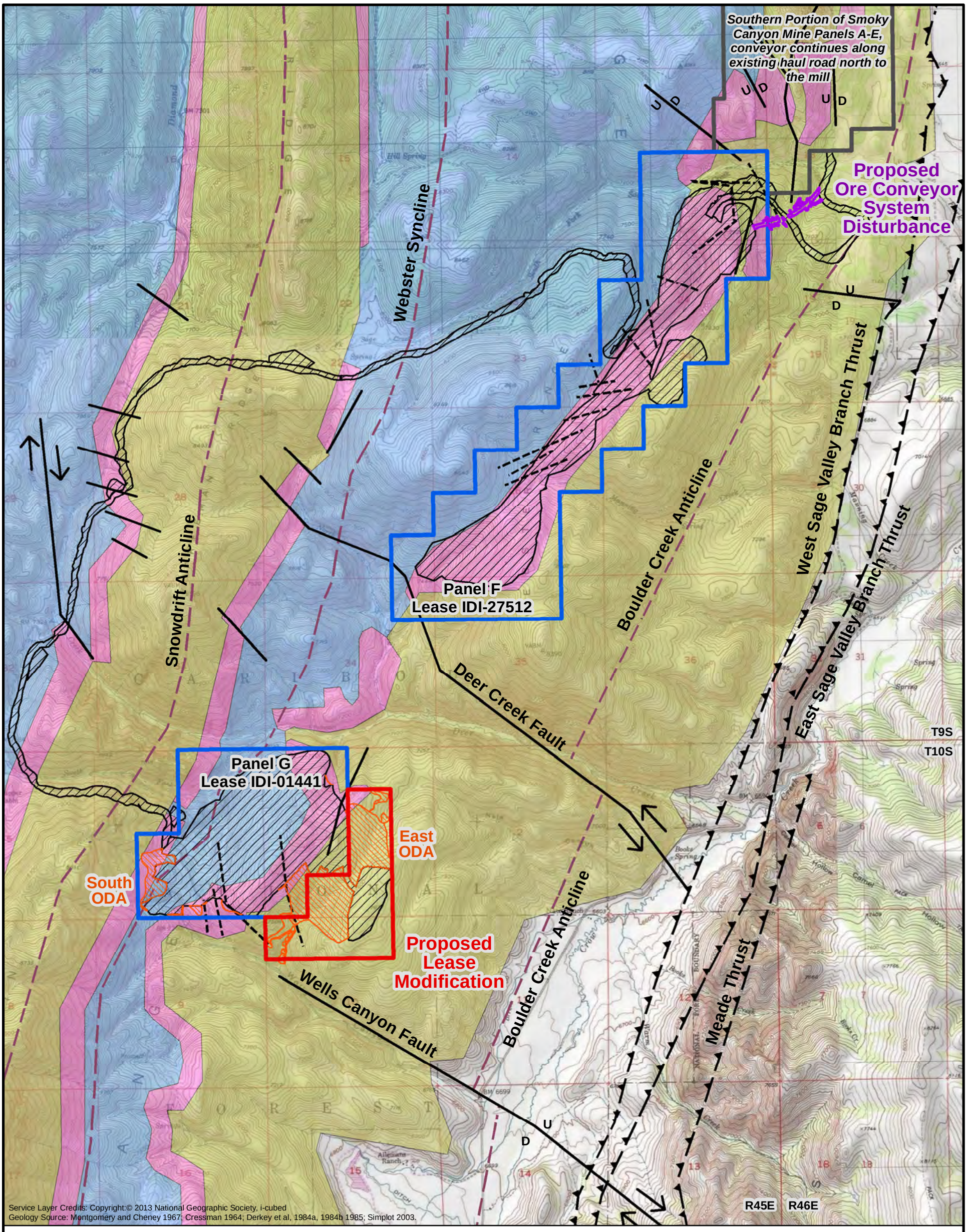
3.2.1 2007 FEIS Affected Environment

This section is tiered to Section 3.1 of the 2007 FEIS, titled Geology, Minerals, and Topography (pages 3-1 through 3-28), and applicable information is hereby incorporated by reference. No new baseline information was collected or deemed necessary for this Project. The following summary of the referenced information is specific to the Project.

3.2.1.1 Geology Resources

The Project Area is within the middle Rocky Mountain and Basin and Range physiographic provinces and is in the central part of the Over-Thrust Belt, a major orogenic zone extending through the North American continent in a general north-south trend. **Figures 3.2-1** and **3.2-2** show the general geology map for the Panels F and G portions of the Project Area under each alternative, and **Figure 3.2-3** provides a general stratigraphic section.

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.2-1 Surface Geology and Faults Proposed Action Alternative 1.mxd



Explanation

- Proposed Conveyor System Disturbance
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panels F & G Disturbance
- Panels F & G Lease Boundaries
- Smoky Canyon Mine

Geology

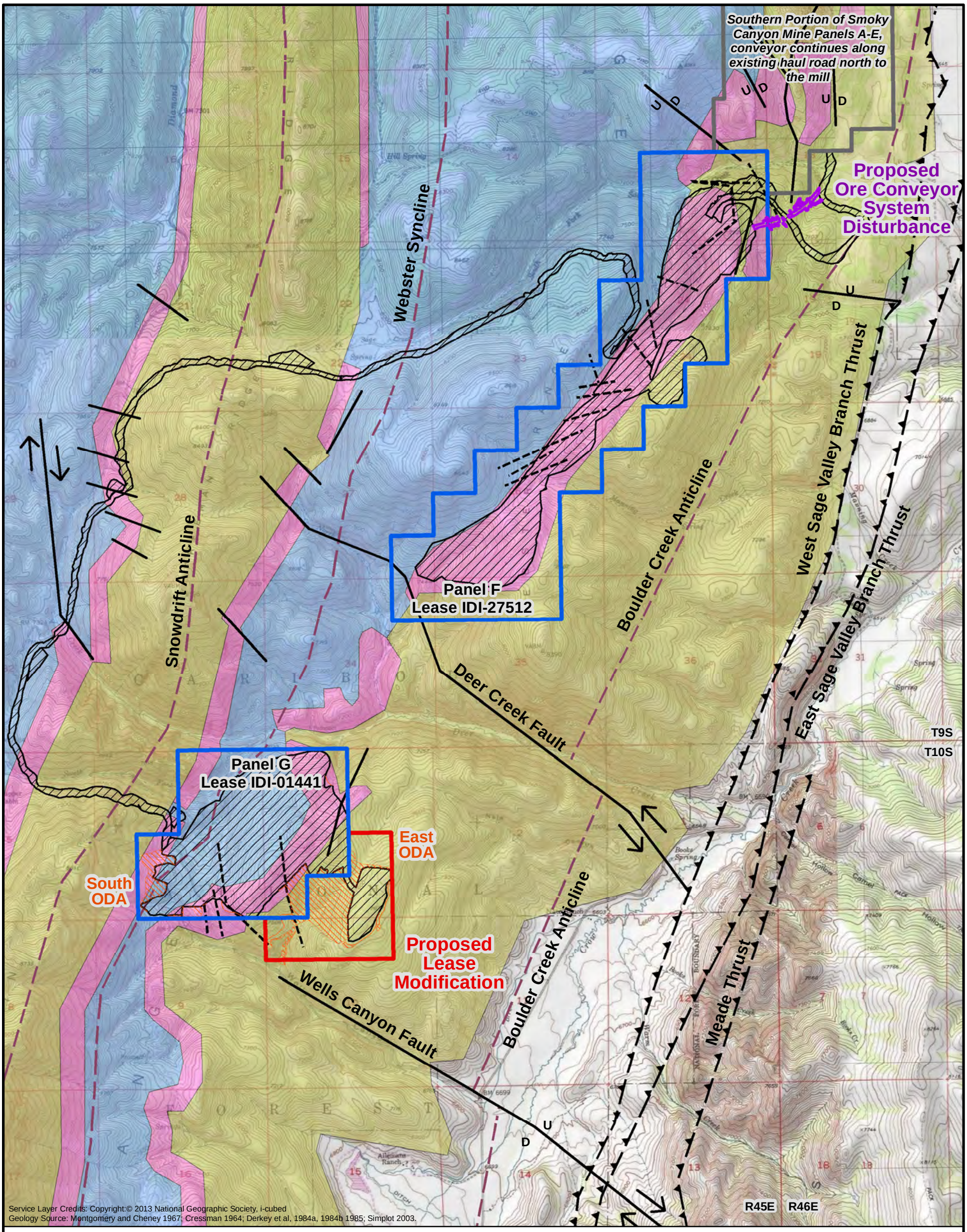
- Meade Peak Member
- Rex Chert Member and Dinwoody Formation
- Wells Formation and Brazer Limestone

- Anticline/Syncline
- Fault Interpreted by Simplot
- Normal Fault (U = upthrown; D = downthrown)
- Thrust Fault

N

3,000 0 3,000 Feet

Figure 3.2-1
Surface Geology and Faults:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS



Explanation

- Proposed Conveyor System Disturbance
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panels F & G Disturbance
- Panels F & G Lease Boundaries
- Smoky Canyon Mine

Geology

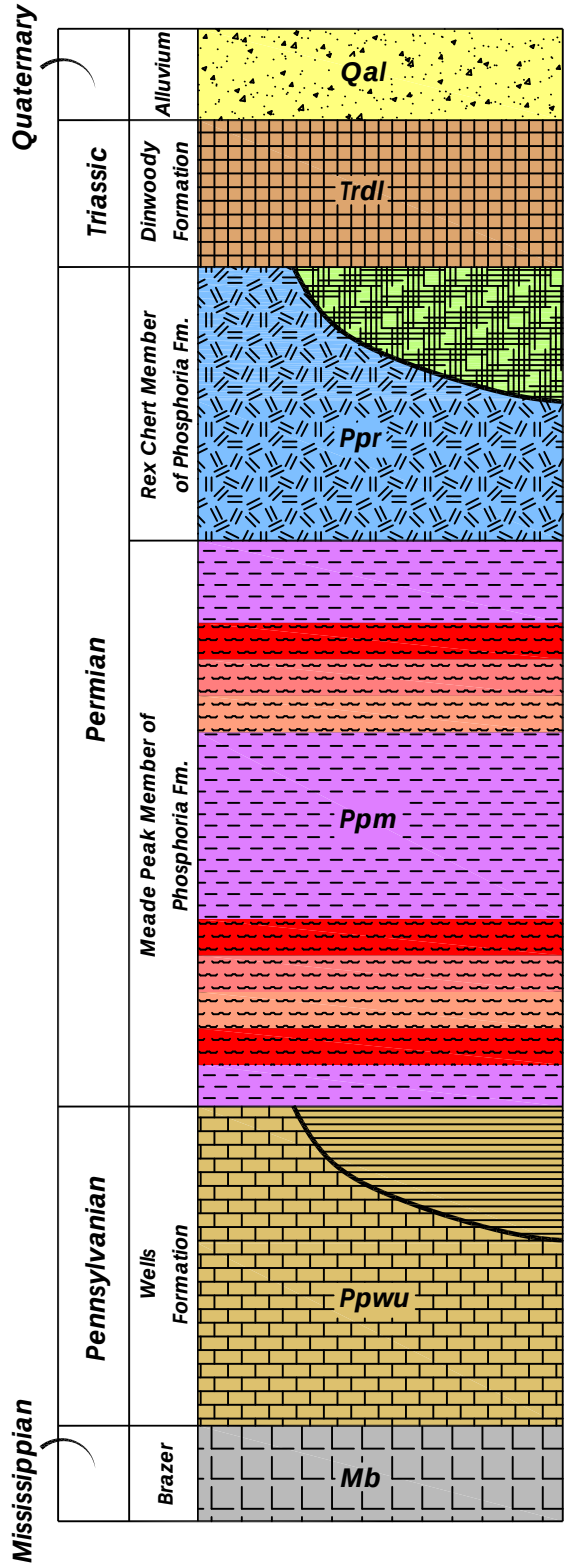
- Meade Peak Member
- Rex Chert Member and Dinwoody Formation
- Wells Formation and Brazer Limestone

- Anticline/Syncline
- Fault Interpreted by Simplot
- Normal Fault (U = upthrown; D = downthrown)
- Thrust Fault

N

3,000 0 3,000 Feet

Figure 3.2-2
Surface Geology and Faults: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS



Alluvium and Colluvium - 0-50 ft.
(Unconsolidated Silt, Sand and Gravel)

Lower Dinwoody
(Siltstone, Limestone and Shale)

Frandson Limestone

Rex Chert - 150-160 ft.
(Cherty Mudstone and Limestone)

Hanging Wall Mudstone - 15-30 ft.

Upper Rich Bed - 2-5 ft.
Lower Rich Bed - 2-5 ft.
Hanging Wall Shale - 2-6 ft.

Center Waste Shale - 75-120 ft.

Hot Bed - 5-10 ft.
Upper Footwall Shale - 2-5 ft.
Lower Footwall Shale - 5-10 ft.
Main Bed Footwall - 4-5 ft.
Footwall Mudstone - 5-10 ft.

Grandeur Limestone - 100 ft.

Wells Sandstone and Limestone - 500-1500 ft.

Brazer Limestone - 1000-1300 ft.

Notes: Not to Scale. Red Units are Ore Bearing (Phosphatic)
From 2007 FEIS

Figure 3.2-3
Stratigraphic Section
Panel F & G Lease/Mine Plan Modifications EIS

As shown, the Brazer Limestone, Wells Formation, Rex Chert Member of the Phosphoria Formation, and Dinwoody Formation all occur within the Project Area. Along with brief descriptions provided in the 2007 FEIS, detailed stratigraphic descriptions are also provided for these geologic resources by Cressman (1964), Montgomery and Cheney (1967), McKelvey et al. (1959), Lowell (1952), and Deiss (1949).

The structural setting (Section 3.1.3), the seismicity and geotechnical stability (Section 3.1.4), and a detail description of the overburden characterization (Section 3.1.5) for the Project Area is provided in the 2007 FEIS and is not repeated in this EIS. Along with the brief summary of more recent CERCLA and remediation activities provided in **Section 2.3.2**, Section 3.1.6 of the 2007 FEIS also provides a description of regional and local past studies on COPCs for the Project Area.

3.2.1.2 Mineral Resources

As described in the 2007 FEIS, phosphate rock minerals are the only significant global source of phosphorus. The main economic use of phosphate rock is production of phosphate fertilizers, primarily diammonium phosphate (DAP). Fertilizers continue to be important to feed the growing world population because, although demand for food will increase, the area of cultivated land is not expected to increase significantly. For this reason, commercial fertilizers will become increasingly important to meet the nutritional requirements of the world's population (USGS 1999). World consumption of phosphate in fertilizer is projected to increase from 41.9 million tons in 2012 to 45.3 million tons in 2016. Phosphate production increased 3.9 percent in the U.S. between 2011 and 2012 (USGS 2013).

3.2.1.3 Potential for Acid Rock Drainage (ARD)

ARD is produced when sulfide minerals contained in rock chemically react with oxygen and water to produce sulfuric acid and other reaction products. This acidic condition can lead to the dissolution of metals that are more soluble in water at low pHs. Other minerals in rock (primarily carbonates) can neutralize acid and cause the precipitation or co-precipitation of dissolved constituents. The potential for generation of ARD is a function of the amount of sulfide minerals present in mine waste and the amount of available minerals to neutralize any generated acid (Lapakko 1993).

Representative samples of cuttings from rotary drill holes completed in 2001 and 2003 by Simplot were collected to test the ARD potential of the major stratigraphic potential overburden units proposed to be mined. Data for Panel G indicate that overburden would not present a significant risk of ARD. This is in line with conditions at the existing Smoky Canyon Mine and other phosphate operations in southeastern Idaho.

3.2.1.4 Topographic Resources

The Project Area is situated within landscapes that include mountainsides, canyons, ridges, and valleys eroded from sedimentary rocks that are folded in generally north-south trending patterns.

Elevations in the Project Area range from about 6,500 feet in the lower end of the South Fork Sage Creek where the Panel F ore conveyor system would cross over along the existing haul road to approximately 7,700 feet at the highest elevations within the Panel G lease modification area.

3.2.1.5 Paleontological Resources

As described in the 2007 FEIS (Section 3.1.9), sedimentary rocks of southeastern Idaho have paleontological resources consisting of vertebrate, invertebrate, and paleobotanical fossils including fish and shark remains. Fossils found in the Smoky Canyon Mine area are not unique to the Project Area. They are found throughout the region wherever similar formations exist (JBR 2001).

3.3 AIR RESOURCES AND NOISE

3.3.1 2007 FEIS Affected Environment

This section is tiered to Section 3.2 of the 2007 FEIS, titled Air Resources and Noise (pages 3-28 through 3-36), and applicable information is hereby incorporated by reference. The following sections summarize information relevant to the Project, although some information has been updated from the 2007 FEIS.

3.3.1.1 Climate Change

Long-term climatological data was obtained from the National Oceanic and Atmospheric Administration (NOAA) for the division of the eastern highlands of Idaho. While regionally representative, the climatology data can be assumed to differ slightly from that at the mine site. This is due to the NOAA data being an average of several weather stations that encompass six counties, one of which is Caribou County. **Table 3.3-1** depicts the average climatological variables for the regional calculated over a period of 13 years from 2000 to 2012.

Table 3.3-1 Average Eastern Highlands Idaho Climate Data from 2000 to 2012

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg.
Average Temperature (F)	21.2	23.4	33.1	42.0	50.3	58.6	68.3	65.6	56.1	44.3	31.8	22.6	43.1
Average Total Precipitation (in.)	1.48	1.04	1.11	1.57	1.74	1.43	0.63	0.88	1.05	1.60	1.21	1.70	1.29

Source: NOAA 2013a

Ongoing scientific research has identified the potential impacts of the "greenhouse effect" resulting from several types of GHGs in air including CO_2, methane, nitrous oxide, water vapor, and several trace gasses on global climate. GHGs make up approximately 0.1 percent of the atmosphere. Through complex interactions on regional and global scales, these GHG emissions are believed to cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the Earth back into space. Although GHG levels have varied for millennia (along with corresponding variations in climatic conditions), recent industrialization and burning of fossil carbon sources is believed by some scientists to have caused CO_2 concentrations to increase, and are likely to contribute to overall climatic changes, typically

referred to as global warming. Increasing CO_2 concentrations also lead to preferential fertilization and growth of specific plant species.

Pollutants such as ozone and particulates may contribute to climate change. Climate impacts are greatest when ozone is in the upper portion of the troposphere (EPA 2011). This is considered "global background ozone" and concentrations are on the rise. Both direct and indirect particulates can have significant impacts on climate. Direct effects are associated with the particles ability to absorb and scatter light. For example, black carbon absorbs sunlight, thus heating the atmosphere. Deposition of black carbon increases the melting of snow and ice, particularly in the arctic and alpine regions. Additionally, particulates can change the reflectivity of clouds and indirectly influence their lifetime and subsequently precipitation (EPA 2011).

3.3.1.2 Air Quality

The State of Idaho regulates and controls air pollution through Title 39 of the Idaho Code. The USFS, which administers much of the Project Area land, protects air quality through compliance with these rules, regulations, and procedures under the IDEQ. The Smoky Canyon Mine has an air quality permit issued by the IDEQ. This air permit was originally issued in the early 1980s and was recently revised in 2012. The existing air permit applies to the mine and milling operations and the associated sources of regulated emissions. As part of the permit, Simplot maintains and implements a Fugitive Dust Control Plan that presents good operating practices to control emissions from the mine and mill operations.

The State of Idaho has adopted EPA's National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. The criteria pollutants are ozone, carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter (PM) with aerodynamic diameter less than or equal to 10 microns and 2.5 microns (PM_{10} and $PM_{2.5}$), and lead (Pb). The NAAQS are shown in **Table 3.3-2**.

Table 3.3-2 State of Idaho and National Ambient Air Quality Standards

POLLUTANT	AVERAGING TIME	CONCENTRATION
Ozone	8 hours	157 $\mu g/m^3$ (0.08 ppm)
Carbon Monoxide (CO)	1 hour 8 hours	40,000 $\mu g/m^3$ (35 ppm) 10,000 $\mu g/m^3$ (9.0 ppm)
Nitrogen Oxides (NO_x)	1 hour Annual Arithmetic Mean	188 $\mu g/m^3$ (0.1 ppm) 100 $\mu g/m^3$ (0.05 ppm)
Sulfur Dioxide (SO_2)	1 hour 3 hours	196 $\mu g/m^3$ (0.075 ppm) 1,300 $\mu g/m^3$ (0.5 ppm)
Particulate Matter as PM_{10} (Aerodynamic diameter $\leq$ 10 microns)	24 hours	150 $\mu g/m^3$
Particulate Matter as $PM_{2.5}$ (Aerodynamic diameter $\leq$ 2.5 microns)	24 hours Annual Arithmetic Mean	35 $\mu g/m^3$ 12 $\mu g/m^3$
Lead (Pb)	Quarterly Arithmetic Mean	1.5 $\mu g/m^3$

Note: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million

Source: 40 CFR 50, National Primary and Secondary Air Quality Standards

Ambient air quality standards for NO_x are the mean value and must not be exceeded at any time during the year in areas with general public access. Short-term standards for CO, NO_x, and SO_2 can be exceeded only once annually. Compliance with the 24-hour PM_{10} and $PM_{2.5}$ standards is based on the 98th percentile of 24-hour concentrations averaged over three years. Similarly, 1-hour nitrogen dioxide (NO_2) is based on the 98th percentile, averaged over three years. One-hour SO_2 is based on the 99th percentile of 1-hour daily maximum concentrations, averaged over three years.

Fugitive dust and particulate control is regulated under Idaho Administrative Code (IDAPA) 58.01.01 for nonmetallic processing operations, haul roads, crushers, screens, material transfers, and stockpiles and must be controlled in accordance to IDAPA 808.01. The ozone standard pertains to an area that meets the standard when the 3-year average of the annual 4th-highest daily maximum, 8-hour concentration is less than or equal to 0.08 ppm.

According to EPA (1998, as cited in USFS 2003b), air quality on NFS lands is typically excellent. However, on occasion, pollutants from communities, industries, and agricultural activities outside of the forest can adversely affect air quality within the forest. Management activities within the forest, such as prescribed burning and use of unpaved forest roads, can produce particulate matter and CO emissions.

The air quality in the vicinity of the Smoky Canyon Mine is good to excellent because of the site's remote location and relatively limited industrial activity in the area. Air quality in the Project Area is designated as in attainment or unclassifiable for all NAAQS and Idaho Ambient Air Quality Standards. There is no record of Simplot's Smoky Canyon Mine ever receiving a Notice of Violation or having caused an NAAQS exceedance episode in regard to air quality (BLM and USFS 2007).

The main emissions that are caused by mining operations include particulate matter generated from in-pit operations and haul truck traffic. These sources are both considered fugitive sources and are regulated by visible emissions (opacity) standards and controlled by fugitive dust mitigation measures.

Air Quality Source Classification

The area surrounding and containing the Project Area is designated as Class II, as defined in the federal Prevention of Significant Deterioration (PSD) program (IDEQ 2002). Moderate degradation of air quality is allowed to occur within certain prescribed limits above baseline levels within a Class II designated area. Industrial sources desiring to locate or expand within a Class II area must demonstrate that the increased emissions will not cause significant degradation of air quality in all classified areas and will not cause visibility degradation in Class I areas.

Within designated Class I PSD areas, the level of deterioration allowed, and therefore the standards prescribed, are much more stringent. Class I areas typically include wilderness areas and National Parks. Within 125 miles of the Smoky Canyon Mine, the federal Mandatory Class I areas include: Yellowstone National Park, Grand Teton National Park, the Bridger Wilderness Area in Wyoming, and Craters of the Moon National Monument in Idaho. A general distance guideline in evaluating Class I area impacts is 60 miles. The Smoky Canyon Mine is located more than 70 miles away from the nearest Class I areas, thus an evaluation for impacts to these areas were deemed unnecessary for **Chapter 4**.

Existing Sources

Information on existing sources is thoroughly described in the 2007 FEIS (Section 3.2.1) and has not changed.

Unpermitted and mobile sources of air pollutants are common in rural settings. Agricultural operations, agricultural burns, forest prescribed burns, open burning/wildfires, road traffic, off-road vehicle use, and construction in the immediate area are all sources of fugitive particulate matter in the Project Area. The EPA estimates that these types of air pollution sources contribute up to 52 percent of the particulate matter emissions in adjacent Lincoln County (EPA 2003).

3.3.1.3 Noise Resources

The 2007 FEIS provides a detailed explanation of noise effects and how to properly assess the noise resources for any area. To briefly summarize, the affected environment for noise impacts is usually limited to a distance of 880 yards (2,640 feet) from the source based on current wildlife studies (Fletcher 1980 in BLM and USFS 2007). However, if residential housing has the potential to be impacted, the affected environment includes the distance from the source of the noise to the residence.

The unit of sound level measurement (i.e., volume) is the decibel (dB), expressed as dBA . The A-weighted decibel measure is used to evaluate ambient noise levels and common noise sources. Sound measurements in dBA give greater emphasis to sound at the mid- and high- frequency levels, which are more discernible to humans. The decibel is a logarithmic measurement; thus, the sound energy increases by a factor of 10 for every 10 dBA increase.

Generally, natural noise levels will be around 35 dBA in rural areas away from communities and roads. Within a rural community, the man-made noise level ranges from 45 dBA to 52 dBA (EPA 1981). The day-night sound level of residential areas should not exceed 55 dBA to protect against activity interference and annoyance (EPA 1981). **Table 3.3-3** presents typical sound levels in dBA and subjective descriptions associated with various noise sources.

Table 3.3-3 Sound Levels Associated with Ordinary Noise Sources

NOISE SOURCE	NOISE LEVEL	SUBJECTIVE DESCRIPTION
Commercial Jet Take-Off	120 dBA	Deafening
Road Construction Jackhammer	100 dBA	Deafening
Busy Urban Street	90 dBA	Very loud
Standard For Hearing Protection 8-Hour Exposure Permissible Exposure Limit (PEL) (Mine Safety and Health Administration [MSHA]) Action Level within Active Mining Facilities	90 dBA 85 dBA	Very loud Loud to very loud
Construction Equipment at 50 feet	80-75 dBA	Loud
Freeway Traffic at 50 feet	70 dBA	Loud
Normal Conversation at 6 feet	60 dBA	Moderate
Typical Office (interior)	50 dBA	Moderate
Typical Residential (interior)	30 dBA	Faint

Noise Regulations

The Federal Noise Control Act of 1972 established a requirement that all federal agencies administer their programs to promote an environment free of noise that jeopardizes public health or welfare. Although the Occupational Safety and Health Administration (OSHA) has the most extensive regulations in regard to noise pollution, these standards are only for noise levels within the workplace.

EPA identifies outdoor noise limits to protect against effects on public health and welfare by an equivalent sound level (Leq), which is an A-weighted average measure over a given time. Outdoor limits of 55 dBA Leq have been identified as desirable to protect against speech interference and sleep disturbance for residential areas and areas with educational and healthcare facilities. Sites are generally acceptable to most people if they are exposed to outdoor noise levels of 65 dBA Leq or less, potentially unacceptable if they are exposed to levels of 65–75 dBA Leq, and unacceptable if exposed to levels of 75 dBA Leq or greater (EPA 1981).

Existing Noise Levels

As part of the 2007 FEIS, existing noise levels were measured under typical operating conditions at the Smoky Canyon Mine and at various surrounding locations unaffected by the mine. Noise measurements at the mine included existing access road traffic, haul road traffic, in-pit activities, and blasting. Haul road noise levels were further segregated into flat terrain, steep grade terrain, haul and dump traffic, and haul and access road traffic. Measurements were taken at locations with various distances and included considerations of terrain and vegetation characteristics. Background noise measurements taken nearest to the Panels F and G area were all generally within the man-made noise level ranges for a rural community. Since those measurements were made, mining of Panel F has been initiated and is progressing southward. Construction of the Panel G West Haul Road has also been initiated and is nearing the existing Panel G lease area.

3.4 WATER RESOURCES

3.4.1 2007 FEIS Affected Environment

This section is tiered to Section 3.3 of the 2007 FEIS, titled Water Resources (pages 3-36 through 3-76), and applicable information hereby incorporated by reference. No new baseline information was collected or deemed necessary for this Project. The following summary of the referenced information is specific to the Project. In addition, some data from the RI/FS Report (Formation Environmental 2014) are presented for context. The RI/FS Report is part of the CERCLA investigation, which was briefly described in **Chapter 2**; it evaluates selenium as both the primary COPC and as an indicator of other COPCs at the existing Smoky Canyon Mine operations.

3.4.1.1 Surface Water Resources

Simplot's existing and approved mining activities are located within small tributary catchments that are either part of the Tygee Creek watershed or the Crow Creek watershed. Both of these watersheds drain to the Salt River. The proposed Panels F and G modifications would be located within the same small catchments, although the Panel F ore conveyor system would only be constructed along an existing haul road within the Tygee Creek watershed. The ore conveyance system on Panel F would cross Sage Creek and two of its tributaries (South Fork Sage and Pole

Canyon creeks), terminating at the existing mill near Smoky Creek. The Panel G modifications would occur within Deer Creek, Nate Canyon, and Wells Canyon catchments. Smoky Creek is tributary to Tygee Creek, while the other potentially affected catchments are tributary to Crow Creek.

The 2007 FEIS and the earlier Final Supplemental EIS, Smoky Canyon Mine Panels B and C (2002 FSEIS; BLM and USFS 2002) described surface water resources for these watersheds. As noted therein, area streams normally exhibit peak flows in April, May, or June, with declining flows in late summer, fall, and winter. Further noted was a characteristic shared among most of the Project Area streams, wherein all or most of the streamflow is lost where stream segments cross the permeable sandstone/limestone bedrock of the Wells Formation. These two characteristics contribute to temporal and spatial variations in flow within the Project Area. The previous 2007 FEIS and 2002 Final Supplemental Environmental Impact Statement (FSEIS) provide detailed information on watershed characteristics, flow patterns, stream flows, water quality, channel morphology/streambed sediment, and surface water uses. The following summaries of this information are given only for potentially affected catchments in order to provide a context for impact assessment. For those catchments within the proposed Panel F modification, only very limited water resources information is provided herein, due to the limited potential for impacts from the Panel F ore conveyor system.

The RFP for the CNF (USFS 2003a) contains goals, standards, and guidelines specific to managing surface water resources under various types of activities that may occur on the CNF. Forest-wide guidance that applies directly to surface water resources will be reviewed and evaluated as it relates to impacts analysis in **Chapter 4**. Further, the analysis will consider RFP guidelines for analyzing proposed projects in regard to non-point pollutant sources, beneficial use impairments, and percent of watershed that would be in a hydrologically disturbed condition at any one time.

As noted, a RI/FS Report (Formation Environmental 2014) has been prepared for the Smoky Canyon Mine to document selenium impacts that are being investigated under CERCLA. That report includes older and more recent surface water monitoring results for numerous sites in the Tygee and Sage Creek watersheds, as well as in Crow Creek up- and downstream of Sage Creek. The most recent data reported in the RI/FS Report were collected in 2010 through 2013, and were used to support the predictive modeling efforts for surface water and groundwater. Although primarily focused outside of the area of interest for the current analysis, the RI/FS Report describes that overburden storage at the Smoky Canyon Mine has resulted in elevated selenium concentrations in Sage Creek and in Crow Creek downstream of Sage Creek, primarily through a groundwater-to-surface water pathway, and will continue to do so in the future (Formation Environmental 2014). Because the proposed Panel G modification would occur within a drainage that is also tributary to Crow Creek, selected information from the RI/FS Report's surface water data and predictions is discussed below under the Panel G Lease Modification subsection of this surface water resources section.

In Idaho, surface water quality is protected by implementing Idaho State Water Quality Standards at IDAPA 58.01.02. Within that code, the State classifies streams according to their designated beneficial uses, and applies numeric and narrative criteria based upon those uses. For undesignated surface waters (including Crow Creek within Idaho, Sage Creek, Deer Creek, Tygee Creek, and their perennial or intermittent tributaries), Idaho Code presumes by default

cold-water aquatic life and contact recreation beneficial are applicable uses and applies relevant water criteria for those uses. Simplot routinely monitors surface water sources at numerous locations near the mine in order to track if mining operations may affect beneficial uses.

Further, states regularly assess streams to determine whether or not they support their designated beneficial uses and report those results online and in reports known as the Integrated 303(d)/305(b) Reports. Streams not meeting beneficial uses may be recommended by states to EPA for listing as impaired under CWA section 303(d). These recommendations are revised and updated every two years. The most current list approved by EPA for Idaho is the 2010 list (IDEQ 2010); at the time the 2007 FEIS was approved, the 2002 Integrated Report for Idaho was in effect (IDEQ 2005). The more current information is provided in the following text where relevant to the proposed Panel G modifications.

Panel F Ore Conveyor System Area

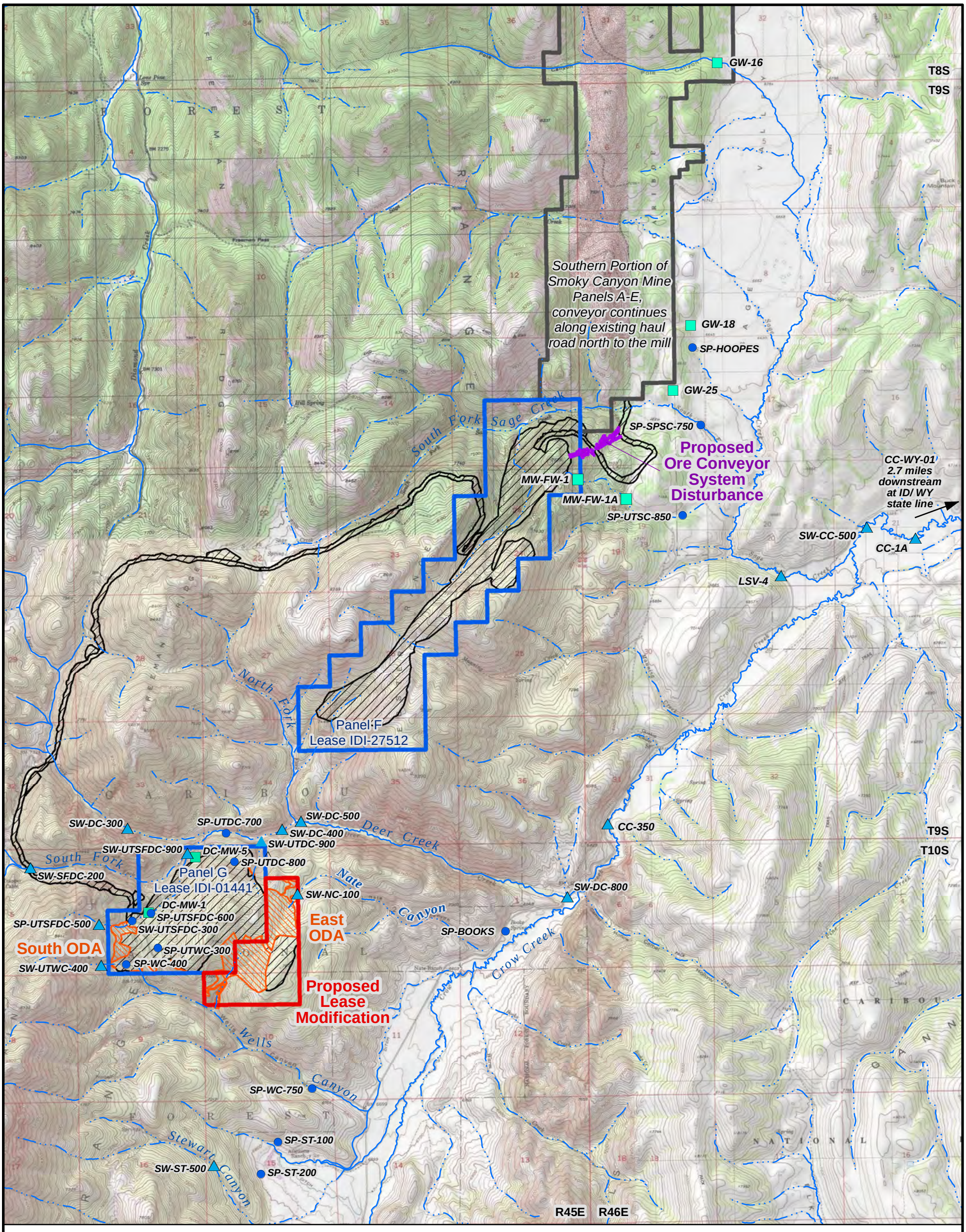
The proposed ore conveyance system would be constructed almost entirely on approved disturbances associated with the existing haul road. Trending south-north, the Panel F ore conveyor system would cross South Fork Sage, Sage, and Pole Canyon creeks on the same earthen fills that support the haul road. It would terminate at the existing ore stockpile at the mill.

Sage Creek is a perennially flowing stream with a watershed area of approximately 25 square miles. Pole Canyon and South Fork Sage are two of the larger subwatersheds within the Sage Creek basin. Pole Canyon creek surface flow apparently reaches Sage Creek only rarely. South Fork Sage Creek upstream of South Fork Sage Creek Spring is characterized as intermittent, and has some channel reaches where the flows go subsurface for distances between perennial pools. Downstream of South Fork Sage Creek Spring, South Fork Sage Creek is perennial to its confluence with the main stem of Sage Creek. Its flow, and flow from Hoopes Spring, helps to maintain a base flow of about 10-15 cubic feet per second (cfs) at Sage Creek's mouth where it enters Crow Creek.

Mine-related disturbances have already occurred within all of these watersheds and impacts to surface water resources from Simplot's mining activities have been previously assessed in the 2007 FEIS and the 2002 FSEIS. The newly proposed Panel F modification of adding an ore conveyor system largely on top of existing disturbance would only have the potential to further alter hydrology by a small increment over current conditions. Therefore, additional details on stream flows or water quality (including impairments) are not provided here.

Panel G Lease Modification, ODAs, GCLL, and Stormwater Control Features

The proposed Panel G modifications would occur on land located between Deer Creek and Wells Canyon, including the upper reaches of Nate Canyon. Most, but not all, of this land has already been approved for disturbance under the 2007 FEIS and 2008 RODs. Streams and springs in these three catchments were among the surface waters that Maxim (2004a, 2004b, 2005) monitored as part of the baseline studies for the 2007 FEIS. Those data, along with updated information where available, provide the basis for the following flow and water quality information. Monitoring site locations are shown on **Figures 3.4-1** and **3.4-2**. Flow and water quality data for years 2006 to the present (Formation Environmental 2013) reflect monitoring of a subset of the baseline monitoring sites; these more recent data (2006 to present) are included in **Appendix 3A**. These catchments were not part of the RI/FS (Formation Environmental 2014).



Explanation

- Proposed Conveyor System Disturbance
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panels F and G Disturbance
- Panels F & G Lease Boundaries
- Smoky Canyon Mine

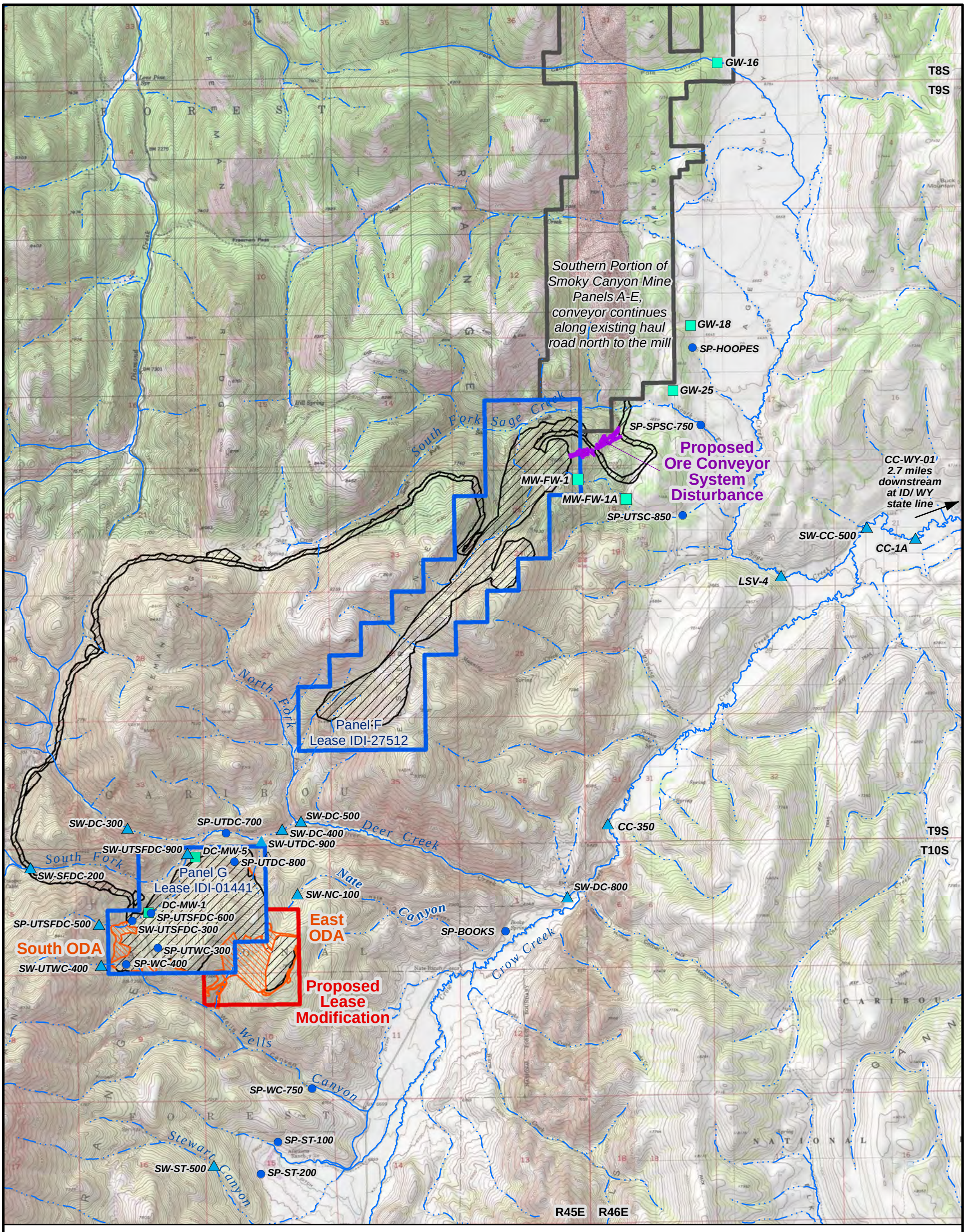
Water Resources

- Intermittent Stream
- Perennial Stream
- Spring/Seep Monitoring Location
- Stream Monitoring Station
- Groundwater Well Location

N

4,000 0 4,000 Feet

Figure 3.4-1
Water Monitoring Locations:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS



Explanation

- Proposed Conveyor System Disturbance
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panels F and G Disturbance
- Panels F & G Lease Boundaries
- Smoky Canyon Mine

Water Resources

- Intermittent Stream
- Perennial Stream
- Spring/Seep Monitoring Location
- Stream Monitoring Station
- Groundwater Well Location

N

4,000 0 4,000 Feet

Figure 3.4-2
Water Monitoring Locations: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Deer Creek drains an area of about 11.5 square miles. Its flows are partially supported by several springs. Perennial in some locations and intermittent in others, Deer Creek's baseflow is about 1.2 to 1.9 cfs in its lower reaches. Further upstream (at SW-DC-400, which is immediately upstream of the confluence with North Fork Deer Creek), flows were monitored eight times between 2002 and 2005. Flow was measured between 2.68 and 7.22 cfs during spring season visits, and no surface flow was observed during summer and fall visits to this site (Maxim 2004a, 2004b, 2005). Subsequent measurements between 2006 and 2010 were generally made in spring and in late fall. While the late fall visits reported no flow, the spring visits measured generally much higher flows (up to 54 cfs) than were found during the baseline period.

A short distance upstream, South Fork of Deer Creek joins Deer Creek. Monitoring at its mouth (SW-UTDC-900) reported no surface flow during either the 2002 or 2003 visits, and the site was not monitored again. A tributary to the South Fork of Deer Creek that is already approved to be disturbed by Panel G activities was monitored at two locations. The upstream site (SW-UTSFDC-300) was monitored twice in 2002; both the spring and fall events reported no surface flow. The downstream site (SW-UTSFDC-900) was monitored three times in 2003; flow was measured at 0.35 cfs in the spring but no flow was present during the summer or fall visits.

Two springs located within the South Fork Deer Creek watershed that would be affected by the previously-approved Panel G South ODA were also monitored. SP-UTSFDC-500 was flowing at 0.002, 0.01, and 0.031 cfs in the spring of 2002, 2003, and 2005, respectively, but was not flowing during any of the summer or fall monitoring events. SP-UTSFDC-600 was visited twice: in spring 2003 a report of "snowmelt" was made and in the fall of that year the report noted "wet." Impacts to these two springs were disclosed in the 2007 FEIS, wherein it was predicted that the former would be covered by overburden and the latter would remain exposed but with impacted water quality (e.g. elevated selenium).

Selenium contamination of surface waters has been associated with past phosphate mining in southeastern Idaho, including at Smoky Canyon Mine within the Sage Creek watershed north of Deer Creek. The 2007 FEIS and 2002 FSEIS discussed this subject in detail. For example, high selenium values were reported in stormwater runoff crossing waste rock dumps and seepage through overburden fills. Further, certain surface water samples contained elevated selenium concentrations, including some that were equal to or greater than the 0.005 milligrams per liter (mg/L) surface water criterion. Data for selected sites (shown in **Figure 3.4-1**) that were part of the RI/FS efforts (Formation Environmental 2014) are graphed in **Figure 3.4-3**, which shows the seasonal and spatial variation in selenium concentrations. At site (LSV-4), located in lower Sage Valley near the mouth of Sage Creek, more than 40 water samples were analyzed for selenium from 2002 through 2012. All showed elevated selenium, which ranged between 0.0031 to 0.045 mg/L (Formation Environmental 2014). The Crow Creek data show the effects of the Sage Creek selenium loading. Site CC-350 is located upstream of Sage Creek and was sampled 24 times from 2006 through 2012; site CC-1A is located downstream of Sage Creek and was sampled 23 times during that period. The range in selenium concentrations at CC-350 was 0.0002 to 0.0014 mg/L, while the range at CC-1A was from non-detect to 0.017 mg/L. Additional sites in Crow Creek were also sampled, including downstream of CC-1A at a site (CC-WY01) near the Wyoming border, where selenium concentrations ranged from 0.003 to 0.013 mg/L (Formation Environmental 2014).

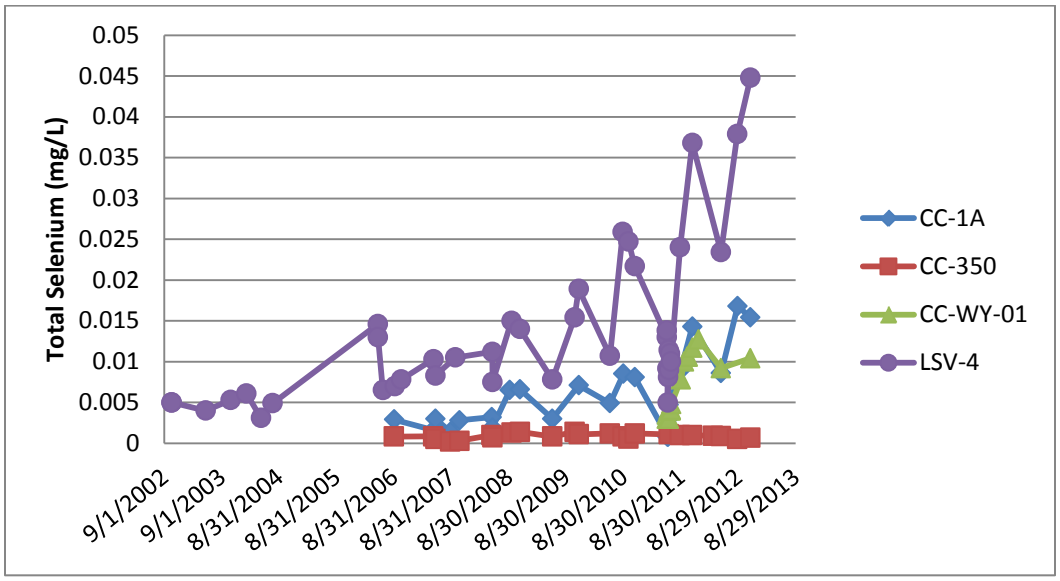


Figure 3.4-3 Selenium Concentrations in Selected Streams

As described in **Section 2.3.2**, CERCLA studies and remediation have been ongoing and are continuing to be implemented in order to address these issues. These include lessening the amount of stream flow and infiltrating precipitation that enters the overburden fills at the Smoky Canyon Mine through revised water management practices at reclaimed areas. These actions lessen the amount of selenium that is leached from the overburden fills and added to the groundwater. In addition, pilot testing of a water treatment plant to reduce selenium concentrations in water discharged at Hoopes Spring is planned to commence in 2014. Utilization of a GCLL on Panel G has been proposed by Simplot under the mine plan to provide even more protection of water quality.

Water quality within the Deer Creek watershed is generally good. Maxim (2004b, 2005) noted that samples from South Fork Deer Creek had better quality in regard to general ionic chemistry than the other area streams that they sampled. However, they also noted exceedances of aquatic life criteria at two sites in the area of the Deer Creek drainage, located upstream of the existing mine and near or within the proposed Panel G modifications. At SW-DC-400, one out of the three samples collected during the baseline study reported a dissolved zinc concentration of 0.64 mg/L, which is well above the 0.105 mg/L hardness-based criteria (the other two samples from that site had much lower zinc concentrations). Subsequent monitoring at this site included a subset of trace metals (cadmium, chromium, nickel, vanadium, and zinc), as well as selenium; no exceedances of aquatic criteria were reported. At SP-UTSFDC-500, one out of the two samples collected during the baseline monitoring reported total mercury (0.0004 mg/L) and dissolved zinc (0.21 mg/L) concentrations that exceeded the relevant aquatic life criteria (0.000012 mg/L and 0.105 mg/L, respectively).

Wells Canyon is a 3.3 square-mile watershed that feeds into an irrigation ditch near its mouth. Upstream reaches are generally ephemeral, while further downstream flows become perennial. During the baseline surface water monitoring, several sites in Wells Canyon were monitored (Maxim 2004a, 2004b, 2005). Relevant to the proposed Panel G modifications are two springs and one stream site in the upper part of the watershed. Spring SP-UTWC-300 was previously

approved to be covered by the South ODA. This spring appears to flow only seasonally. Spring SP-UTWC-400 (previously named SP-WC-400) was to remain uncovered under the previous 2007 FEIS, but its water quality was expected to be impacted. This spring appears to sustain flow year-round, based upon the baseline monitoring for the 2007 FEIS, with measured flows between 0.002 and 1.82 cfs reported during the 2002–2005 time period. Between spring 2006 and spring 2009, measured flows ranged from 0.0005 cfs to 0.229 cfs. Since that time, all site visits have reported no flow. This spring continues to be monitored twice a year (spring and fall). A tributary to Wells Canyon (ST-UTWC-400), also approved to be covered by the South ODA, was dry during all three site visits, two of which were made during spring.

Maxim (2004b, 2005) also collected water samples from both of the aforementioned springs during the baseline period. Total mercury exceeded the aquatic life standard in one of the three samples collected from SP-UTWC-300. SP-UTWC-400 was sampled a total of nine different days within the baseline period. Exceedances were reported for selenium in August 2002 and cadmium, mercury, and zinc in August 2004. Subsequent monitoring at this spring included a subset of trace metals (cadmium, chromium, nickel, vanadium, and zinc), as well as selenium; no exceedances of aquatic criteria were reported.

Nate Canyon is a small ephemeral drainage that captures runoff from the area south of the Deer Creek catchment and north of the Wells Canyon catchment. In 2003 and 2004, Maxim (2004a) monitored a site in the upstream reaches of the channel, which would be covered under the proposed expansion of the East ODA. This site (SW-NC-100) had no surface flow during any of the five monitoring events.

Maxim (2004a) attributed the Deer and Wells catchment surface water criteria exceedances to natural geologic sources. Further, the State's approved 2010 305(b) Integrated Report (IDEQ 2010) for these streams does not indicate impairment due to trace elements.

Other types of impairment are noted in the approved 2010 305(b) Integrated Report (IDEQ 2010). First, 11.69 miles of the "South Fork Deer Creek" assessment unit ([AU] ID17040105SK010_02a) are listed as impaired under both Sections 5 and 4c of the report. The AU includes the South Fork mainstem (including its southern tributary) and Upper Deer Creek (including two tributaries) above its confluence with the South Fork. Section 4c lists waters impaired by physical substrate habitat alteration, which is not considered a pollutant. Section 5 lists waters impaired by one or more pollutants, and equates to the 303(d) list. The South Fork Deer Creek AU is considered as not fully supporting aquatic life beneficial uses due to sedimentation/siltation. Wells Canyon and Nate Canyon are both listed along with 65 miles of Crow Creek and tributaries under AU ID17040105SK008_02 as not supporting recreational beneficial use designations due to *Escherichia coli*. The lower reaches of both Deer Creek and Wells Canyon are considered to fully support beneficial uses.

The 2007 FEIS described sediment in surface waters in the vicinity of the Smoky Canyon Mine in multiple ways. The 2007 FEIS noted that area streams had measured suspended solids concentrations that were commonly less than detection levels (5 mg/L); and analogous turbidity measurements ranged from less than 1.0 to 52 Nephelometric Turbidity Units (NTUs) and apparently encompassed more runoff-related data. Both of these parameters reflect instantaneous water quality conditions. The 2007 FEIS also described surface water sediment conditions in area streams based upon several channel bed metrics; these reflect a more cumulative measure of transported sediments. In general, these data reflected widely varying conditions: Pebble counts

indicated stream bed surfaces that were predominately gravel-sized, but core samples reflected higher percentages of fine particles than is conducive to aquatic habitat. Embeddedness measurements ranged widely. Further, Simplot tracks sediment accumulation in and released from their sediment retention ponds as required by their SWPPP (Simplot AgriBusiness 2004) and uses that data to reassess and modify stormwater management BMPs and EPMs as needed.

In addition to their physical characteristics, the chemical makeup of streambed sediments can also be important to aquatic and riparian resources. The 2007 FEIS also discussed this subject, noting that area streambed sediment samples had relatively high (greater than benchmark levels) of cadmium, chromium, nickel, and zinc concentrations even where mining had not yet occurred; copper and selenium concentrations were below benchmarks.

3.4.1.2 Groundwater Resources

The 2007 FEIS provided a detailed discussion of groundwater resources in the vicinity of the Smoky Canyon Mine, including descriptions of hydrostratigraphy, recharge/discharge, hydraulic characteristics, and water quality, as well as assessing the local groundwater-surface water connections. In short, that information reports that sedimentary rock units, including those bearing the ore, generally control the area's groundwater flow systems. The primary regional aquifer is the Wells Formation (along with the associated Brazer Limestone); the overlying Rex Chert member of the Phosphoria Formation and the Dinwoody Formation are also water bearing and are considered locally important (**Figures 3.2-1** and **3.2-3**). Separating the Wells Formation from these other two shallower geologic units is the Meade Peak member of the Phosphoria Formation. The Meade Peak member is generally considered to be a barrier to downward groundwater movement between the aforementioned aquifers; the effectiveness of which is influenced by the degree of fracturing of the unit. As a result, groundwater in the Rex Chert member and Dinwoody Formation does not recharge the aquifer in the Wells Formation to a significant degree. The exception to this is where perennial streams flowing across the Dinwoody are supported by Dinwoody groundwater, and these stream flows are lost downstream to the Wells Formation outcrop where the channels cross the outcrop. Groundwater from the Wells Formation and Brazer Limestone does not flow up through the Meade Peak member, so it does not connect to seeps, springs, and streams within the outcrop areas of the Rex Chert member or Dinwoody Formation.

In general, recharge of the primary aquifer occurs along the high-elevation Freeman Ridge and Snowdrift Mountain, and groundwater flows generally eastward toward discharges located in Sage and Crow Creek valleys (**Figures 3.2-1** and **3.4-1**). Additional recharge occurs along this flow path where outcrop of the Wells Formation and Brazer Limestone occur between the eastward edge of the Phosphoria Formation and the discharge locations. Discharge from the primary aquifer occurs as major springs that are at, or near, the trace of the thrust faults in Sage Valley and in the bottom of Crow Creek Valley. Discharge from the more localized groundwater flow systems (Dinwoody Formation and Rex Chert member of the Phosphoria Formation) produces smaller springs and seeps in and near the Panels F and G lease areas. Area streams gain flow from groundwater discharges in the Dinwoody Formation and then lose flow over the Wells Formation, notably in upper Wells Canyon and the Deer Creek drainage. However, at the Meade Thrust Fault zone, groundwater in the primary regional aquifer discharges upward to surface streams and springs located along the fault zone or locations immediately west of it.

The aforementioned RI/FS Report (Formation Environmental 2014) also provided an extensive analysis of geology, hydrogeology, and groundwater, primarily focused on the area to the north of South Fork Sage Creek and the Panels F and G lease areas. That more recent report supports the general characterizations from the 2007 FEIS, such as the general direction of groundwater flow in the area. **Figure 3.4-4** is taken from the RI/FS Report (Formation Environmental 2014) and shows the Wells Formation regional groundwater flow. **Figures 3.4-5** and **3.4-6** are taken from the 2007 FEIS and show more detail in the vicinity of Panel G. These figures illustrate that the South Fork of Sage Creek drainage, which essentially separates Panels F and G (to the south) and Panels A through E (to the north), is the low point for both areas and groundwater flows converge to this low point from both directions.

The RI/FS Report (Formation Environmental 2014) also provides new groundwater data as well as new predictive modeling. Some of this new information is particularly relevant to selenium loading from the active and historic mine to groundwater. Groundwater data for the RI/FS were collected in 2010, 2011, 2012, and early 2013 from the Wells Formation aquifer and from alluvial groundwater, as well as from certain springs. Data collection sites (i.e., GW-20, LSV-SP1, etc.) were primarily east of the existing mine operations outside of the proposed Panels F and G modification area.

However, it is noteworthy that selenium concentrations have continued to increase at several of those locations since they were reported in the 2007 FEIS. In particular, monitoring well GW-16, located down gradient of the Pole Canyon overburden disposal area (**Figures 3.4-1** and **3.4-2**) and completed in the Wells Formation, was reported in the 2007 FEIS to have selenium concentrations ranging from 0.45 to 0.64 mg/L. That well saw concentrations rise to a peak of 1.27 mg/L in 2008, and between early 2009 and late 2012 they fluctuated between about 0.7 and 0.9 mg/L (Formation Environmental 2014).

Total selenium concentrations in groundwater near Hoopes Spring and South Fork Sage Creek springs have also changed since data were reported in the 2007 FEIS. GW-18 describes Wells Formation water quality just north of Hoopes Spring. Samples collected from that monitoring well had total selenium concentrations ranging from 0.004 to 0.006 mg/L, according to the 2007 EIS. Since then, selenium concentrations have gradually risen to about 0.01 mg/L as of the end of 2012, according to the RI/FS Report (Formation Environmental 2014). GW-25 describes Wells Formation groundwater north of South Fork Sage Creek Spring. It was not installed until 2007, but since the initial sample, total selenium concentrations have climbed from less than 0.001 to more than 0.1 mg/L (Formation Environmental 2014). As surface expressions of Wells Formation groundwater in this area, Hoopes Spring and South Fork Sage Creek Spring continue to show elevated, and increasing, selenium concentrations, as measured at several component discharge sites. At four monitored locations within the Hoopes Spring complex, total selenium concentration data collected from 2000 to early 2013 had mean concentrations ranging from 0.0394 to 0.0558 mg/L, trending upward, according to the RI/FS Report (Formation Environmental 2014). The RI/FS Report also reported mean total selenium concentrations at several sites in the South Fork Sage Creek springs complex ranging from 0.0024 to 0.0826 mg/L., also trending upward.

Panel F Ore Conveyance System Area

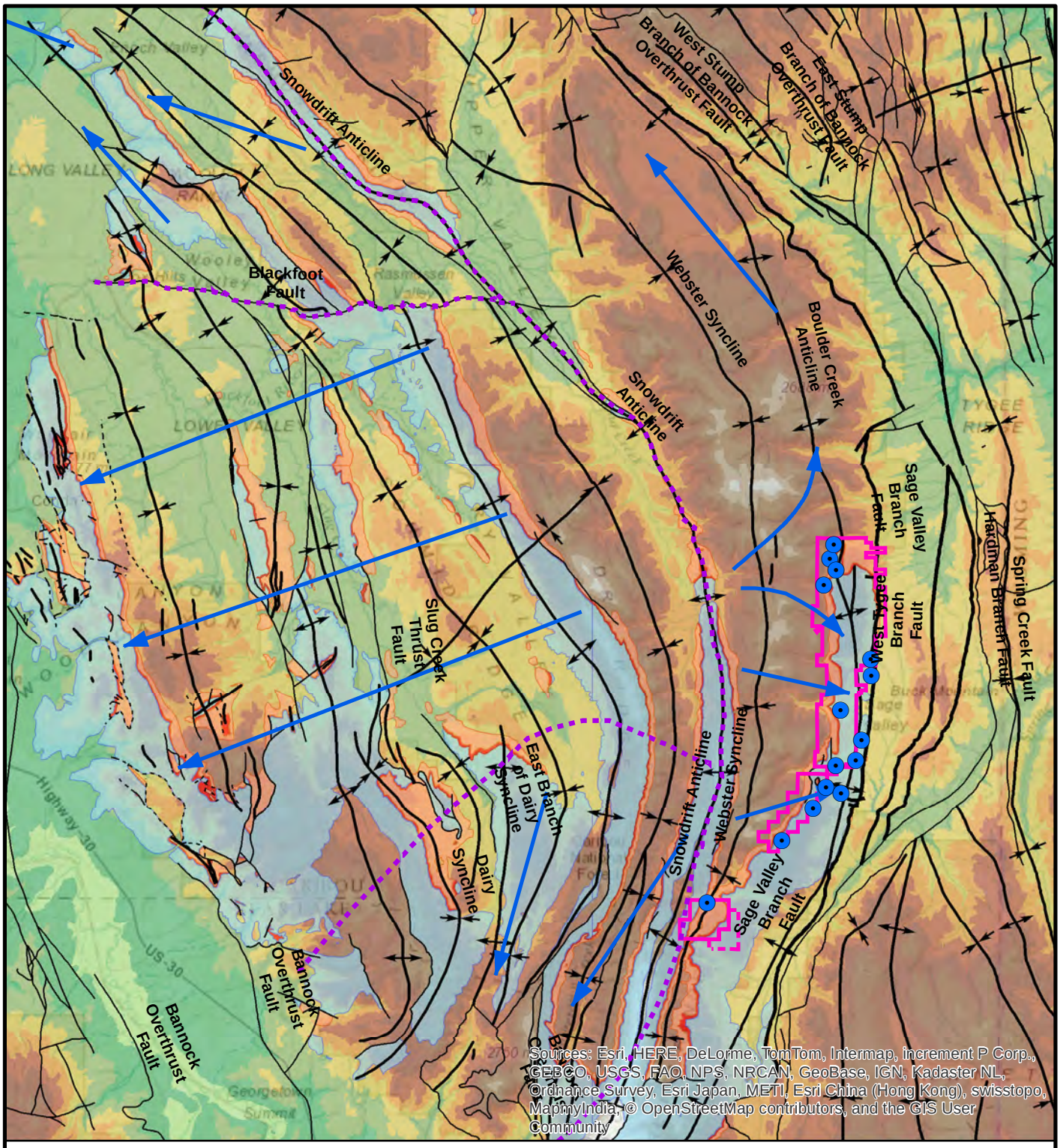
The 2007 FEIS notes that limited groundwater occurs at relatively shallow depths in the Rex Chert and in fractured Meade Peak, as indicated by exploration drilling observances and baseline groundwater monitoring, and that the regional water table in the Wells Formation is estimated to be from 200 to 800 feet below the bottom of the Panel F pit. The 2007 FEIS concluded that some groundwater quality impacts would likely result from mining operations, primarily from leaching of infiltration of precipitation through overburden in the pit backfills. Due to the nature of the proposed modifications for the Panel F ore conveyance system (adding an ore conveyor system on top of largely disturbed areas), incremental impacts to groundwater are not foreseeable, thus more detailed background conditions are not described here. In addition, the RI/FS predictive modeling (Formation Environmental 2014) did not include the Panel F area or the area south of South Fork Sage Creek, so updated groundwater predictions are not relevant to this subsection.

Panel G Lease Modification, ODAs, GCLL, and Stormwater Control Features

Groundwater was also found in Rex Chert at relatively shallow depths in the Panel G location. However, the regional Wells Formation water table is estimated to be approximately 100 to 200 feet below the deepest portion of the approved pit bottom. A small spring, Wells Canyon Spring, is located about a third of the way up Wells Canyon and may be influenced by the Wells Canyon Fault located in this canyon. Books Spring is located along the Deer Creek Fault and likely discharges from the Wells Formation and/or Brazer Limestone.

Along with surface water, groundwater was also sampled as part of baseline data collected to support the 2007 FEIS. These data, obtained from a number of monitoring wells, were compared to groundwater quality standards and the 2007 FEIS found that in general, area groundwater meets the relevant standards, with some exceptions. Notably, well DC-MW-5, completed in the upper Wells Formation at Panel G, had selenium, aluminum, cadmium, chromium, iron, and manganese concentrations that were anomalously high in the total metal analyses; however, in this case, these anomalies were attributed to inadequate well development. The other baseline Wells Formation monitoring well, MC-MW-1, had selenium concentrations well below the surface water selenium standard (0.005 mg/L), confirming that baseline selenium concentrations in the Wells Formation aquifer are low. Note that MC-MW-1 was also sampled as part of the RI/FS, and continues to be considered unaffected (Formation Environmental 2014). Manganese in three Rex Chert, two alluvial, and three Meade Peak monitoring wells exceeded the secondary standard.

Section 3.4.1.1 described exceedances of trace element surface water criteria from spring samples collected in the Panel G area. Here, the focus is on characterizing general spring chemistry as it relates to groundwater chemistry. Throughout the Panel G area, springs were of generally good quality with total dissolved solids (TDS) values ranging from 22 to 308 mg/L. The lowest TDS values were from SP-UTWC-300 (22 mg/L) and SP-UTSFDC-500 (54 mg/L), which discharge from colluvium west of Panel G. The higher TDS springs included two springs located on the south end of Panel F (SP-UTNFDC-600 = 308 mg/L) and the north end of Panel G (SP-UTDC-800 = 285 mg/L), which likely discharge groundwater from the Rex Chert or alluvium/colluvium. These sites were not part of the RI/FS.



Legend

- Wells Fm Monitoring Wells (Smoky Canyon Mine only)
- Smoky Canyon Lease Area/Active Mineral Extraction Area
- Lease Modification Area

Wells Fm Regional Flow

- GW Flow Divide
- Groundwater Flow Line

Selected Geologic Units

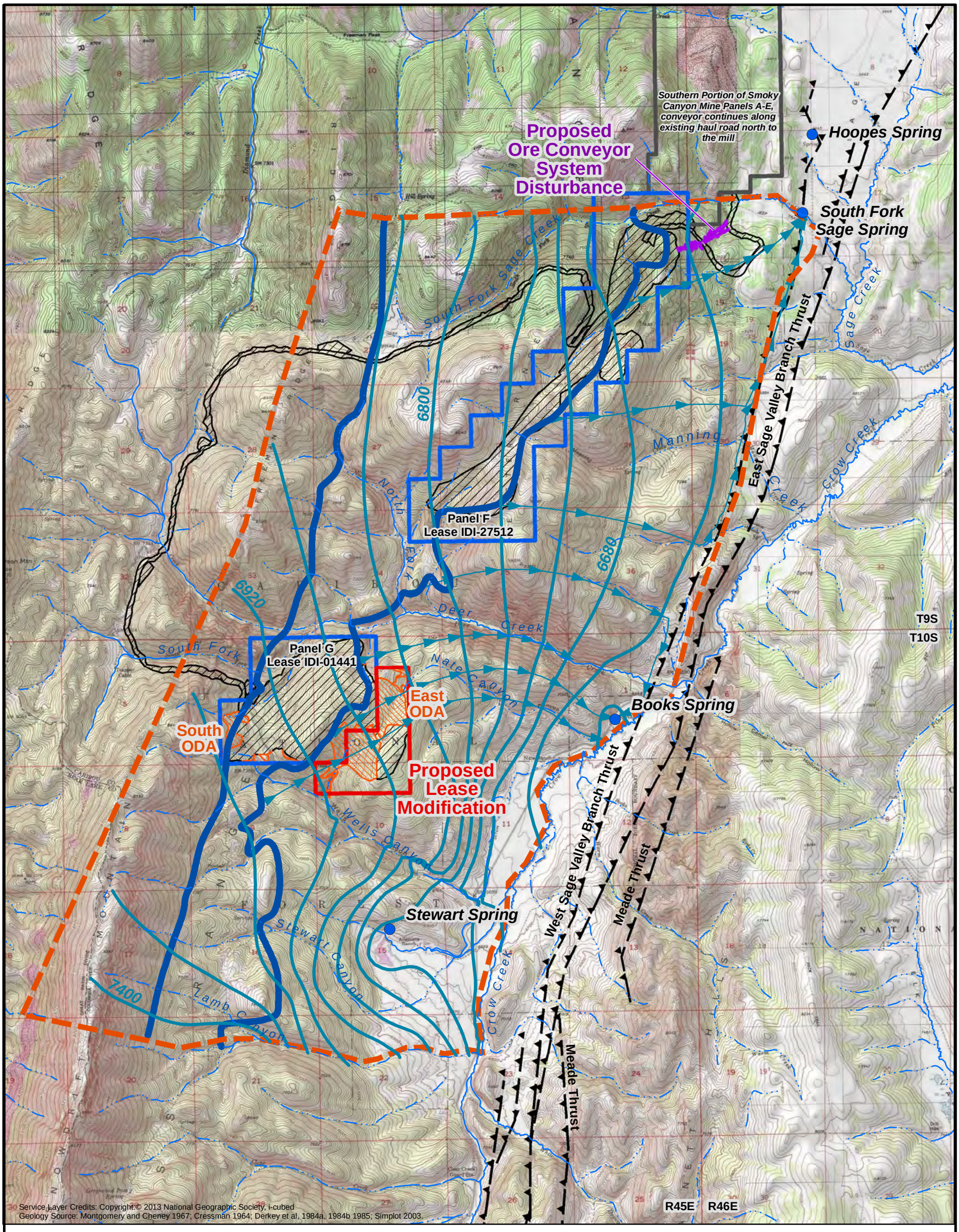
- Meade Peak Member
- Rex Chert Member
- Wells Formation

From RI/FS (Formation Environmental 2014)

5 0 5 Miles

N

Figure 3.4-4
Wells Formation Regional Groundwater Flow
Panel F & G Lease/Mine Plan Modifications EIS



From 2007 EIS

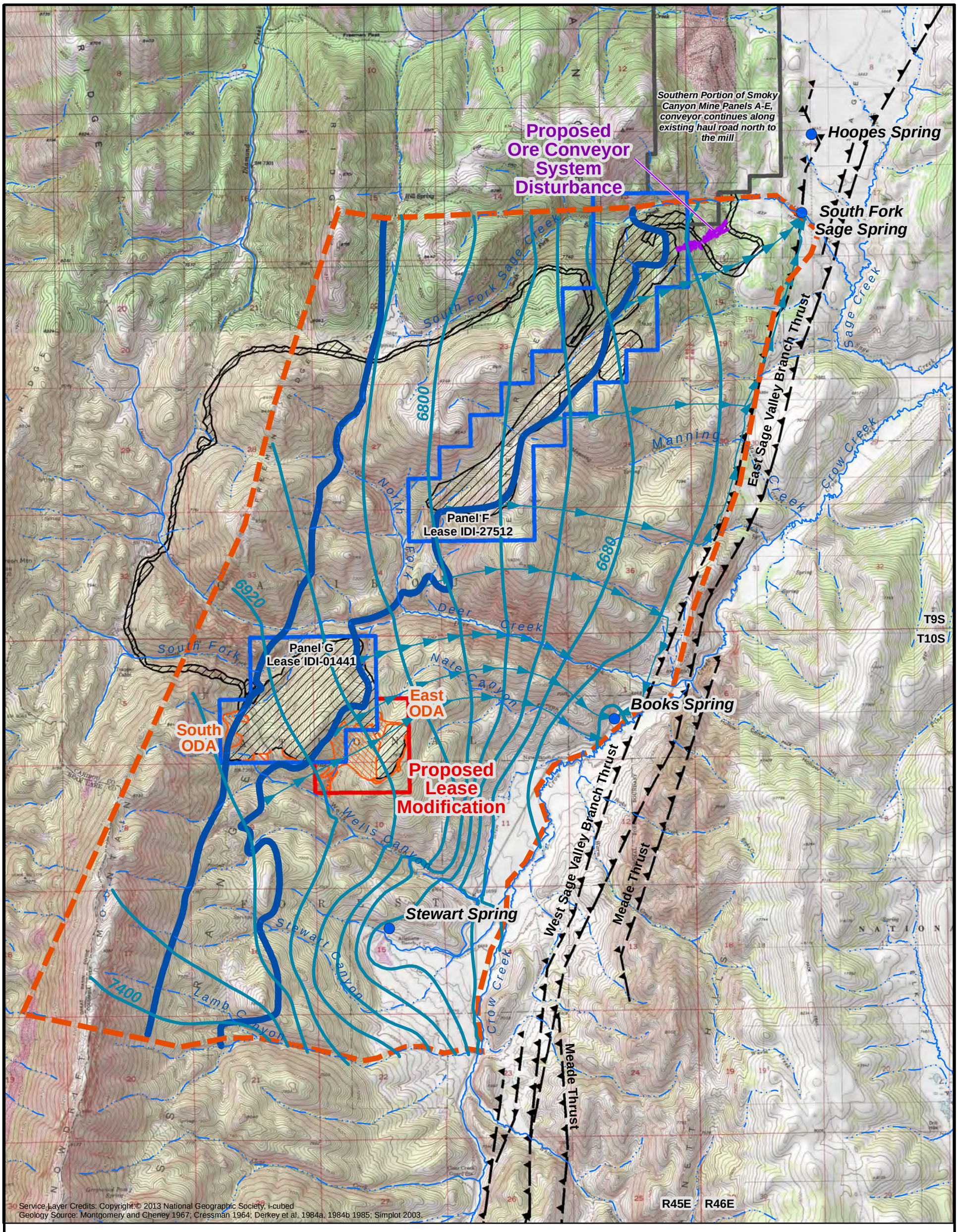
Explanation

- Proposed Conveyor System Disturbance
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panel F and Haul Road Disturbance
- Approved Panels F & G Disturbance
- Panels F & G Lease Boundaries
- Smoky Canyon Mine
- Spring from Wells Formation
- Thrust Fault
- Boundary of Model
- Boundary of Meade Peak Aquitard
- Modeled Piezometric Surface in Wells Formation and Brazer Limestone
- Particle track indicating direction of groundwater flow

N

3,000 0 3,000 Feet

Figure 3.4-5
Modeled Potentiometric Surface and Groundwater Flow Direction
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS



From 2007 EIS

Explanation

- Proposed Conveyor System Disturbance
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panel F and Haul Road Disturbance
- Approved Panels F & G Disturbance
- Panels F & G Lease Boundaries
- Smoky Canyon Mine
- Spring from Wells Formation
- Thrust Fault
- Boundary of Model
- Boundary of Meade Peak Aquitard
- Modeled Piezometric Surface in Wells Formation and Brazer Limestone
- Particle track indicating direction of groundwater flow

N

3,000 0 3,000 Feet

Figure 3.4-6
Modeled Potentiometric Surface and Groundwater Flow Direction
Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Major ion concentrations comprising the TDS in the area groundwater samples generally reflect groundwater of calcium-magnesium bicarbonate type. The major ion types and concentrations of the water in the Wells Formation monitoring wells were similar to those reported for the Wells Formation springs, demonstrating a common aquifer. Rex Chert monitoring wells and spring waters that discharge on the exposed Rex Chert (including SP-UTWC-400) had generally lower ion concentrations than the Wells Formation water samples. The chemistries for waters sampled from monitoring wells and springs contained in Meade Peak shales all had higher concentrations of calcium and bicarbonate than the samples from the Rex Chert.

Based upon information gathered for the numerical groundwater model that was developed for the 2007 FEIS, as well as water chemistry and stable isotope data, it is apparent that there are two separate groundwater systems in the vicinity of the Smoky Canyon Mine: the Rex Chert and Dinwoody groundwater system located stratigraphically above the Meade Peak member; and the Wells Formation and Brazer Limestone groundwater system below the Meade Peak. Further, the relationship between surface waters and each of these groundwater systems can be described as follows.

In the Panel G vicinity, groundwater in the Dinwoody supports perennial and seasonal seeps, springs, and streams in Upper Deer Creek (above SW-DC-300), Upper South Fork Deer Creek (above SW-SFDC-200), and North Fork Deer Creek (above SW-DC-500). Groundwater in the Rex Chert apparently supports flow to isolated seeps and springs in some areas near Panel G, namely SP-UTWC-400, SP-UTWC-300, SP-UTDC-800, SP-UTDC-700, SP-UTSFDC-500 and SP-UTSFDC-600. As with the groundwater interpretations, these surface-groundwater relationships were determined by analyzing and comparing water chemistry and stable isotope characteristics of various waters.

Groundwater supporting the seeps, springs, and streams in the Dinwoody and Rex Chert areas is stratigraphically above the Meade Peak member and is not connected to the groundwater in the Wells Formation and Brazer Limestone underlying the Meade Peak.

Groundwater contained in the Wells Formation and Brazer Limestone does not support any of the springs or streams in the immediate Panel G area, but does support waters further downstream, such as Lower Deer Creek (above SW-DC-800), Wells Canyon (SP-WC-750), Books Spring (SP-Books), and Crow Creek both directly (stream underflow) and indirectly (from discharges tributary to Crow Creek). Because Crow Creek further downstream is also supported by groundwater (directly and indirectly) that originates from the Smoky Canyon Mine panels further north, which were the subject of the RI/FS, the predictions made therein are relevant to the surface water impact assessment (**Sections 4.4** and **5.4**) and will be discussed in those sections.

3.5 SOILS

3.5.1 2007 FEIS Affected Environment

This section is tiered to Section 3.4 of the 2007 FEIS, titled Soils (pages 3-76 through 3-101), and applicable information is incorporated by reference. In addition to incorporating much of the previously collected and presented information from the 2007 FEIS as it relates to the Project Area, an additional 2nd Order soil survey was conducted for areas not originally covered in the 2007 FEIS, and that additional information is presented in the following sections.

3.5.1.1 Soil Survey

Using the baseline information from Maxim (2004c), additional 2nd Order soil survey information was expanded and updated as appropriate to cover the additional areas proposed for disturbance for this Project (JBR 2013b). Existing 3rd Order soil survey data was mapped and is displayed on Figure 3.5.3 in the 2007 FEIS, but because the more detailed 2nd Order soil survey information was collected for the proposed disturbance areas for the Project, the 3rd Order data is not summarized here.

Maxim (2004c) was reviewed for applicability to this Project. Soil families in the 2004 soil survey were classified using the Ninth Edition of Keys to Soil Taxonomy. Several changes were made to the soil classification system between the Ninth and Eleventh (current) editions of Keys to Soil Taxonomy.

Soil series that were used as family names in the 2004 soil survey have been correlated to new taxonomic classifications by the Natural Resources Conservation Service (NRCS). These classification changes are detailed in JBR 2013b. Comparisons of these changes are important in maintaining continuity between the soils identified in Maxim 2004c and those soils identified in JBR 2013b. Characteristics of the individual soil types remained the same in the field, only the taxonomic classification of the soil series changed. The current taxonomic classification of the soils was obtained from the Official Series Descriptions (USDA 2013a).

3.5.1.2 Mapped Soil Unit Characteristics

Soil map units determined to be within the Project Area as described in the baseline technical report (JBR 2013b) are shown for the Panel F area in **Figure 3.5-1** and the Panel G Proposed Action/Alternative 1 area in **Figure 3.5-2**. They are shown for the Panel G Alternative 2 area in **Figure 3.5-3**. Profile descriptions and complete soil map unit data for each sample site are presented in the baseline report (JBR 2013b). **Table 3.5-1** provides a summary of the soil map units not previously described in Maxim 2004c, the taxonomic family, percent of the map unit, and the taxonomic classification of each soil type.

Table 3.5-1 Soil Map Unit Descriptions within the 2013 Soil Survey Area

MAP UNIT NUMBER[1]/ NAME	TAXONOMIC FAMILY	PERCENTAGE OF MAP UNIT	TAXONOMIC CLASSIFICATION
6/ Woodrock-Tahquats Complex, 15 to 50 percent slopes	Woodrock	55	Typic Glossocryalfs fine-loamy, mixed, superactive
	Tahquats	30	Typic Argicryolls loamy-skeletal, mixed, superactive
	Presa	10	Typic Haplocryalfs loamy-skeletal, mixed, superactive
	Starley	5	Lithic Haplocryolls loamy-skeletal, mixed, superactive
9/ Swede-Tahquats Complex, 10 to 15 percent slopes	Swede	45	Typic Argicryolls fine-loamy, mixed, superactive
	Tahquats	40	Typic Argicryolls loamy-skeletal, mixed, superactive
	Sambrito	10	Typic Haplocryepts coarse-loamy, mixed, superactive
	Rock Outcrop	5	Not-applicable
10/ Woodrock Loams, 10 to 20 percent	Woodrock	90	Typic Glossocryalfs fine-loamy, mixed, superactive
	Presa	5	Typic Haplocryalfs loamy-skeletal, mixed, superactive
	Tahquats	5	Typic Argicryolls loamy-skeletal, mixed, superactive
13/ Tahquats-Dranyon Complex, 20 to 30 percent slopes	Tahquats	60	Typic Argicryolls loamy-skeletal, mixed, superactive
	Dranyon	25	Pachic Argicryolls fine-loamy, mixed, superactive
	Povey	10	Pachic Haplocryolls loamy-skeletal, mixed, superactive
	Presa	5	Typic Haplocryalfs loamy-skeletal, mixed, superactive
14/ Tahquats-Sambrito Complex, 35 to 45 percent	Tahquats	60	Typic Argicryolls loamy-skeletal, mixed, superactive
	Sambrito	30	Typic Haplocryepts coarse-loamy, mixed, superactive
	Rock Outcrop	10	Not-applicable
16/ Presa Loams, 10 to 15 percent slopes	Presa	80	Typic Haplocryalfs loamy-skeletal, mixed, superactive
	Woodrock	10	Typic Glossocryalfs fine-loamy, mixed, superactive
	Tahquats	10	Typic Argicryolls loamy-skeletal, mixed, superactive
16A/ Presa Loams, 3 to 10 percent slopes	Presa	80	Typic Haplocryalfs loamy-skeletal, mixed, superactive
	Woodrock	10	Typic Glossocryalfs fine-loamy, mixed, superactive
	Tahquats	10	Typic Argicryolls loamy-skeletal, mixed, superactive

MAP UNIT NUMBER[1]/ NAME	TAXONOMIC FAMILY	PERCENTAGE OF MAP UNIT	TAXONOMIC CLASSIFICATION
19/ Judkins-Tahquats Complex, 25 to 50 percent slopes	Judkins	45	Xeric Palecryalfs loamy-skeletal, mixed, superactive
	Tahquats	40	Typic Argicryolls loamy-skeletal, mixed, superactive
	Starley	5	Lithic Haplocryolls loamy-skeletal, mixed, superactive
	Presa	5	Typic Haplocryalfs loamy-skeletal, mixed, superactive
	Woodrock	5	Typic Glossocryalfs fine-loamy, mixed, superactive
24/ Cloud Peak Silt Loams	Presa	75	Typic Haplocryalfs loamy-skeletal, mixed, superactive
	Woodrock	10	Typic Glossocryalfs fine-loamy, mixed, superactive
	Tahquats	10	Typic Argicryolls loamy-skeletal, mixed, superactive
	Starley	5	Lithic Haplocryolls loamy-skeletal, mixed, superactive
26/ Starley Silt Loams	Starley	85	Lithic Haplocryolls loamy-skeletal, mixed, superactive
	Presa	5	Typic Haplocryalfs loamy-skeletal, mixed, superactive
	Woodrock	5	Typic Glossocryalfs fine-loamy, mixed, superactive
	Tahquats	5	Typic Argicryolls loamy-skeletal, mixed, superactive

Source: JBR 2013b

[1] Map units are identified on **Figures 3.5-1**, **3.5-2**, and **3.5-3** (units previously described in Maxim 2004c are not included in table).

3.5.1.3 Topsoil/Growth Medium Suitability

As described in the 2007 FEIS, mountainous terrain does not favor optimal soil development. Soils on mountain slopes are susceptible to increased erosion rates that constantly remove the fine particles from the surface and deposit them on the surfaces of soils occupying the alluvial or valley slopes. Mountain soils also tend to have high concentrations of coarse fragments that are transported to the alluvial slopes during landslide events over time. Shallow, stony soils provide a minimal amount of quality topsoil/growth medium material for reclamation.

The suitable topsoil/growth medium depths determined for each soil type were based on the amount of salvageable unconsolidated material available in the surface soil or within the subsoil. The CTNF has recommended the criteria listed in Construction Materials; Reclamation (USDA 2013b) as the basis for determining topsoil suitability and estimating salvage depths for the Project. **Table 3.5-2** lists these criteria.

Table 3.5-2 Criteria for Determining Topsoil Suitability and Estimating Salvage Depths

SOIL FEATURE	NOT LIMITING[1]	SOMEWHAT LIMITING[1]	LIMITING[1]
Too Clayey (percent clay)	≤30%	>30% to <40%	≥40%
Cobble Content (3 to 10 inches)[2]	≤25%	>25% to ≤ 50%	>50%
Water Erosion (K factor)	≤0.35	>0.35 to <0.70	≥0.70
Carbonate Content (calcium carbonate equivalent - CCE)	≤15%	>15% to <40%	≥ 40%
Sodium Content (sodium adsorption ration – SAR)	≤4	>4 to ≤13	>13
Droughty (Available Water Capacity – cumulative depth)	≥15 cm	>7.5 cm to <15 cm	≤7.5 cm
Depth to Bedrock	>100 cm	≥50 cm to ≤100 cm	<50 cm
Depth to Cemented Pan	≥100 cm	≥50 cm to <100 cm	<50 cm
Stone Content (greater than 10 inches)[2]	≤5%	>5% to ≤15%	>15%
Low Content of Organic Matter	≥1%	>0% to <1%	= 0%
Too Alkaline (soil pH)	≤8.5		>8.5
Too Acid (soil pH)	≥6.5	≥4.0 to <6.5	<4.0
Salinity (electrical conductivity –ECe – mmhos/cm)	<8	≤8 to ≥16	>16
Too Sandy (percent sand - #4 to #200 sieves)	≤70%	>70% to <85%	≥ 85%
Wind Erosion (Wind Erodibility Group)	All others		1 and 2

[1]Refer to limitation details in *Construction Materials; Reclamation* (USDA 2013b).
[2]Soil features are percent weighted average by weight course fragments (USDA 2013b).

Depth to bedrock, volume of rock fragments, and size of rock fragments are the primary limiting soil characteristics when estimating the depth and volume of topsoil and/or suitable subsoil horizons that may be salvaged from the Project Area. Topsoil salvage depths should be expected to vary for the same soil over short distances. Topsoil salvage depths were calculated for seven profiles described in the soil survey for the 2007 FEIS (Maxim 2004c). Three of these profiles (G-TP-19, G-TP-20, and G-TP-30) were described within the boundary of the Panel G portion of the Project Area soil survey area. The other four profiles were used to calculate salvage depths for the Judkins family (G-TP-19) and Swede family (F-TP-55, F-TP-72, and F-TP-75) which occur in map units that are of very limited extent in the Project Area. **Table 3.5-3** presents the estimated topsoil salvage depths and volumes for soil map units to be impacted by the Project.

Map units 1, 5, 7, and 22 (shown on **Figures 3.5-1**, **3.5-2**, and **3.5-3**) were previously described in Maxim (2004c), but are included in **Table 3.5-3** because there is proposed disturbance within these units.

Table 3.5-3 Estimated Salvage Depths and Volumes for Soil Map Units within the Panels F and G Lease and Mine Modification Areas

MAP UNIT	MAJOR SOIL FAMILIES	ACRES TO BE DISTURBED WITHIN THE PROPOSED ACTION AREA[1]	ESTIMATED AVERAGE SALVAGE DEPTH[2] (FEET)	ESTIMATED SALVAGE VOLUME (CUBIC YARDS)	LIMITING SOIL FEATURES
Proposed Panel F Ore Conveyor System Area					
9	Swede – Tahquats, 10-15% slopes	1.6	1.9	4,751	Depth to Stones and Cobbles
14	Tahquats – Sambrito, 35-45% slopes	6.3	1.8	15,246	Depth to Stones
22	Judkins Silt Loam	0.2	1.8[3]	610	Excessive Coarse Fragments
	Total	**8.1**		**20,607**	
Proposed Action[1] Panel G East ODA Area, South ODA, and Stormwater Features					
1	Ericson – Rock River Complex	0.2	1.3[3]	461	None
5	Tahquats – Farlow Complex	1.0	0[3]	0	Excessive coarse fragment content and slope
6	Woodrock – Tahquats, 15-50% slopes	68.1	3.0	328,442	Depth to Cobbles and Stones
7	Drayon-Parkey Complex, 5-30%	1.9	1.3[3]	3,922	None
10	Woodrock loams, 10-20% slopes	13.7	3.2	70,574	Depth to Cobbles
13	Tahquats – Dranyon, 20-30% slopes	30.1	2.5	121,202	Depth to Cobbles and Stones
16A	Presa loams, 3-10% slopes	4.9	2.6	20,638	Depth to Cobbles, Low AWC, and Depth to Bedrock
19	Judkins – Tahquats, 25-50% slopes	0.2	1.8	465	Depth to Cobbles and Stones
24	Presa silt loams, 20-30% slopes	19.9	2.9	93,152	Depth to Cobbles and Depth to Bedrock
26	Starley silt loams	21.3	1.3	44,694	Depth to Bedrock
	Total	**161.3**		**686,842**	

[1] The Proposed Action footprint is the largest area potentially disturbed. See Chapter 2.

[2] Sources: JBR 2013b and BLM and USFS 2007.

[3] Source: BLM and USFS 2007.

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.5-1 2nd Order Soils Survey - Panel F Conveyor System Area.mxd

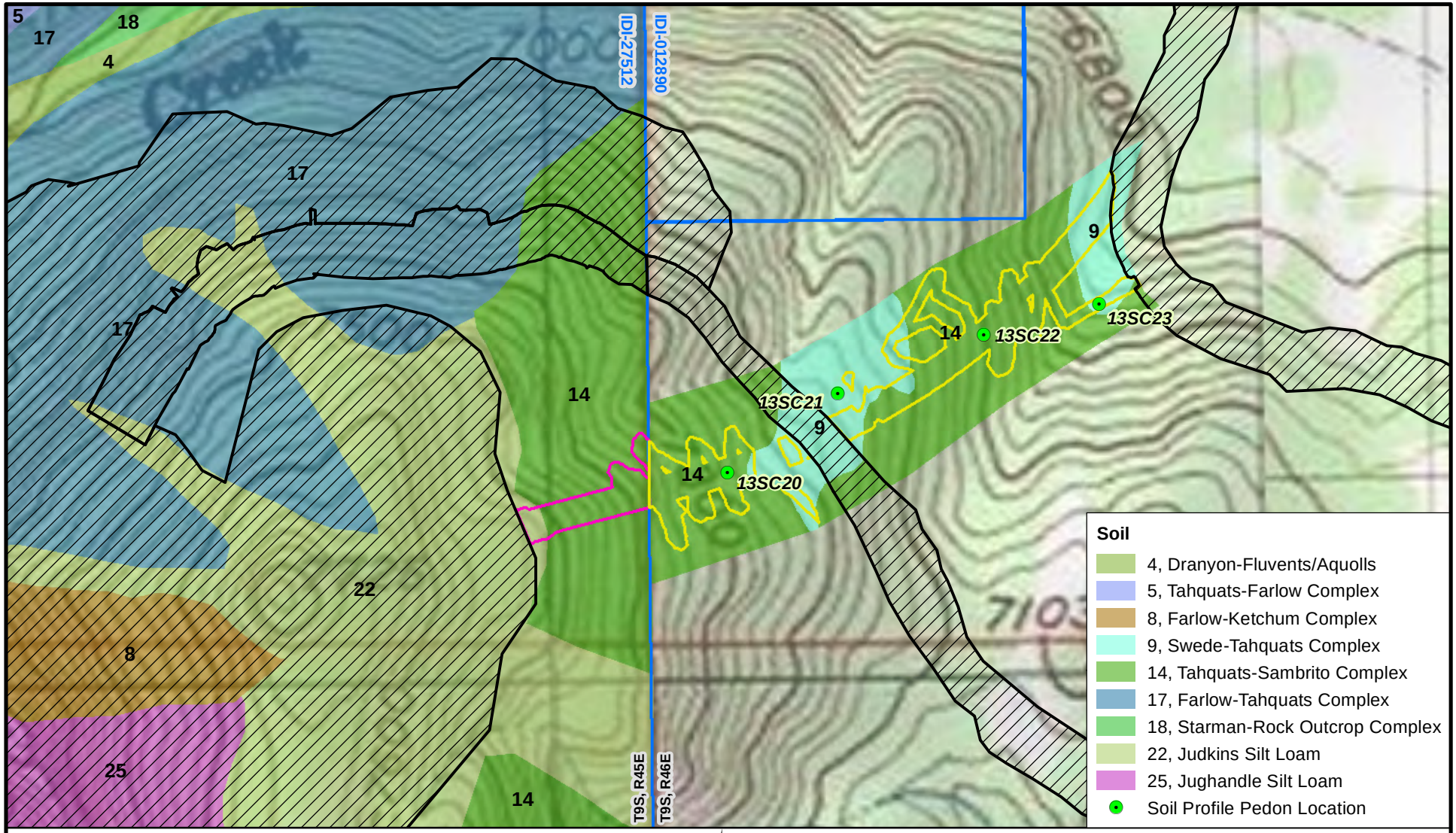


Figure 3.5-1
2nd Order Soils Survey
Panel F Conveyor System Area
Panel F & G Lease/Mine Plan Modifications EIS

T9S, R45E

T10S, R45E

Lease IDI-01441

Proposed Lease Modification

Wells Canyon

Fork

BM 7260

N

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Soil

- 1, Ericson-Rock River Complex
- 3, Presa-Ketchum Complex
- 5, Tahquats-Farlow Complex
- 6, Ericson-Tahquats Complex
- 7, Dranyon-Parkey Complex
- 8, Farlow-Ketchum Complex
- 9, Swede-Tahquats Complex
- 10, Ericson Loams
- 13, Tahquats-Dranyon Complex
- 14, Tahquats-Sambrito Complex
- 16, Presa Loams, 10-15% Slopes
- 16A, Presa Loams, 3-10% Slopes
- 19, Judkins-Tahquats Complex
- 22, Judkins Silt Loam
- 24, Presa Silt Loam
- 26, Starley Silt Loam
- Soil Profile Pedon Location

N

800 0 800 Feet

Figure 3.5-2
2nd Order Soils Survey
Panel G Lease Modification Area:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.5-2 2nd Order Soils Survey - Panel G Lease Modification Area Proposed Action Alternative 1.mxd

T9S, R45E

T10S, R45E

Lease IDI-01441

Proposed Lease Modification

Wells Canyon

Fork

BM 7260

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Soil

- 1, Ericson-Rock River Complex
- 3, Presa-Ketchum Complex
- 5, Tahquats-Farlow Complex
- 6, Ericson-Tahquats Complex
- 7, Dranyon-Parkey Complex
- 8, Farlow-Ketchum Complex
- 9, Swede-Tahquats Complex
- 10, Ericson Loams
- 13, Tahquats-Dranyon Complex
- 14, Tahquats-Sambrito Complex
- 16, Presa Loams, 10-15% Slopes
- 16A, Presa Loams, 3-10% Slopes
- 19, Judkins-Tahquats Complex
- 22, Judkins Silt Loam
- 24, Presa Silt Loam
- 26, Starley Silt Loam
- Soil Profile Pedon Location

N

800 0 800 Feet

Figure 3.5-3
2nd Order Soils Survey
Panel G Lease Modification Area: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.5-3 2nd Order Soils Survey - Panel G Lease Modification Area Alternative 2.mxd

3.5.1.4 Potential Salvage Limitations Based on Heavy Metal Content

In an effort to develop soil suitability standards for use in reclamation efforts, Simplot has used guidelines developed by the CTNF specific to selenium (USDA 2003). This guideline states that soils with less than 13 milligrams per kilogram (mg/kg) total selenium or 0.10 mg/kg extractable selenium have been demonstrated to yield vegetation that meets applicable reclamation standards for selenium. While these limits are not mandated, such guidelines may help assist with decisions regarding soil suitability. Although additional metals, such as nickel, zinc, and cadmium, may be present in unsuitable levels, selenium has been identified as a parameter affecting soil management.

For the soil map units identified within the Project Area, **Table 3.5-4** presents the maximum selenium concentrations for sampled soils based upon the data provided in Maxim (2004c). In addition, concentrations for cadmium, nickel, and zinc are also included, even though there are currently no specific guidelines that would limit use in reclamation.

Naturally occurring selenium concentrations in soil vary greatly depending on the profile location. When soils are salvaged for proposed mining operations, soil from different areas can become mixed, reducing selenium concentrations in the soil mixture. The total concentration of selenium in soils does not directly determine the concentration of available selenium in the plants growing on those soils (Lakin 1972; Fisher 1991).

Concentrations of selenium in topsoil/growth medium samples collected were below detection limits in most soil samples reported in Maxim (2004c). Extractable selenium concentrations were generally less than 0.1 mg/kg, indicating that the hazard for excessive selenium uptake in vegetation in undisturbed soil is low, with the following exceptions specific to the soil types identified within the Project Area:

- The Judkins soil type at sample site F-TP-9 contained 0.14 mg/kg of extractable selenium in the top seven inches of the profile. The remainder of the profile (7-29 inches) showed extractable selenium of less than 0.10 mg/kg.
- At sample site F-TP-22, the Tahquats (Blaine) soil had extractable selenium levels of 0.12 to 0.15 mg/kg in the soil profile layers below six inches (6-19 inches).
- The Woodrock (Ericson) soil had extractable selenium of 0.12 mg/kg in the soil layer between 15-21 inches and 0.26 mg/kg in soil below 21 inches (21-26 inches) at sample site F-TP-27.
- The Presa (Cloud Peak) soil at sample site F-TP-45 showed extractable selenium of 0.12 mg/kg in the 16-23 inch layer. The remainder of the profile (23-55 inches) showed extractable selenium of less than 0.10 mg/kg. At sample site F-TP-67, the Presa (Cloud Peak) soil had extractable selenium of 0.13 mg/kg in soils greater than 20 inches deep.
- At sample site F-TP-46, the Swede soil had one layer (20-33 inches) that showed extractable Se of 0.13 mg/kg. The remaining portions of the profile (0-20 and 33-45 inches) showed extractable selenium of less than 0.10 mg/kg. At sample site F-TP-55, the Swede soil showed extractable selenium levels ranging from 0.11 to 0.14 mg/kg throughout the soil profile (0-28 inches).

- The Parkay soil at site F-TP-59 showed extractable selenium at 0.1 mg/kg below 16 inches deep.
- The Sambrito (Jughandle) soil variant at sample site F-TP-63 showed extractable selenium levels ranging from 0.11 to 0.12 mg/kg throughout the soil profile (0-28 inches).

It should be noted that data collected from individual soil sample sites, especially within soil inclusions within various soil complexes, may not be representative of the surrounding soil in the major map unit based upon soil sample laboratory analysis reported in Maxim (2004c).

Table 3.5-4 Maximum Selenium and Trace Element Concentrations for Sampled Soils within the Panels F and G Lease and Mine Plan Modifications Soil Survey Areas

ANALYTICAL RESULTS – EXTRACTABLE (MG/KG)[1]					ANALYTICAL RESULTS – TOTAL (MG/KG)[1]			
SOIL TYPE	CADMIUM	NICKEL	SELENIUM	ZINC	CADMIUM	NICKEL	SELENIUM	ZINC
Tahquats (Blaine)	1.1	1	0.15	7.7	2	36	ND	156
Presa (Cloud Peak)	2.9	0.8	0.13	9.4	8	33	ND	280
Woodrock (Ericson)	1.1	36	0.26	5	2	49	ND	207
Judkins	30	217	0.14	67.2	12	244	6	944
Sambrito (Jughandle variant)	0.1	0.9	0.12	1.2	ND	13	ND	52
Parkay	0.6	1.8	0.10	--	ND	32	ND	245
Swede	0.2	0.6	0.14	2.4	ND	15	ND	61

Source: Maxim 2004c

[1] Maximum value reported at any sample site, in any single soil horizon.

ND = Not Detected (Indicates nonspecific value below detection limit); -- = Not noted or analysis not requested

3.6 VEGETATION

3.6.1 2007 FEIS Affected Environment

This section is tiered to Section 3.5 of the 2007 FEIS, titled Vegetation (pages 3-101 through 3-112), and applicable information is hereby incorporated by reference. No new baseline information was collected or deemed necessary for this Project as a baseline assessment of vegetation resources that covered the Project Area was conducted for the 2007 FEIS. The following summary of the referenced information is specific to the Project.

3.6.1.1 Cover Type Descriptions

A total of seven vegetation cover types as assessed, described, and mapped in Maxim (2004d) occur within the Project Area and are displayed in **Figure 3.6-1** for the Panel F portion of the Project; **Figure 3.6-2** for the Panel G portion of the Project for the Proposed Action and Alternative 1; and **Figure 3.6-3** for Alternative 2. **Table 3.6-1** lists the seven vegetation cover types, the acres of each one by Project component, and the principal plant species found within each cover type. A detailed description of each vegetation cover type is provided in the 2007 FEIS.

3.6.1.2 Special Status Plant Species

The USFWS list (revised on October 22, 2013) of Threatened, Endangered, Proposed, and Candidate (TEPC) plant species for Idaho by county was reviewed in November 2013. No TEPC plant species were listed or are known or expected to occur on the CNF or within Caribou County, Idaho. In addition to TEPC species, the Regional Forester identifies USFS-Sensitive species as those for which population viability is a concern, as evidenced by significant current and predicted downward trends in population numbers, density, and/or habitat capability that would reduce a species' existing distribution. USFS-Sensitive species receive special management emphasis from the USFS to ensure their viability and to preclude trends toward endangerment that could result in the need for federal listing (Forest Service Manual 2672.1). As described in Section 3.5.3 of the 2007 FEIS, there are three USFS-Sensitive plant species known to occur on the CNF; however, none of these species were identified within the large Study Area for the 2007 FEIS. In addition, based on known habitat requirements or where each of these plant species has been known to occur, potentially suitable habitat within the Project Area is very limited or non-existent. Background information on each species is contained in the 2007 FEIS and additional information can be found in the RFP EIS (USFS 2003b).

3.6.1.3 Noxious Weeds

Noxious weed species, as defined in Executive Order 13112 (64 CFR 6183, Invasive Species, February 1999), are those plants of foreign origin, not widely prevalent in the U.S., that can injure crops, ecosystems, interests of agriculture, or fish and wildlife resources. They generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, or a carrier or host to insect pests or disease. The State of Idaho is responsible for listing noxious weeds in the State. According to the Idaho Department of Agriculture there are 65 species the state considers to be noxious weeds (IDA 2014).

In 1996, the CNF adopted Integrated Pest Management (IPM) guidelines to treat uncontrolled noxious weeds. IPM emphasizes the best management strategies for weed control and uses the

best control techniques available for the targeted species. In February 2001, the CTNF completed a forest strategy for noxious weeds developed from direction found in the following documents: National Administration's Pulling Together – National Strategy of Invasive Plant Management, Forest Service's Stemming the Invasive Tide – A Forest Service Strategy for Noxious and Nonnative Invasive Plant Management, and Idaho's Strategic Plan for Managing Noxious Weeds. The RFP (USFS 2003a) outlines the goal of minimizing the establishment and spread of noxious weeds through the application of forest direction, IPM, and BMPs. The RFP also establishes standards and guidelines to be used for controlling and eliminating noxious weeds and other invasive plant species (USFS 2003a). Under the approved M&RPs and SUAs for Smoky Canyon Mine, Simplot is required to monitor and control noxious weeds using guidelines established by the USFS.

Figures 3.6-2 and **3.6-3** show the only previously identified locations of noxious weed species within the Panel G portion of the Project Area from Maxim (2004d). As displayed, musk thistle (*Carduus nutans*) and Canada thistle (*Cirsium arvense*) are the only two noxious weeds that occur within or near the Project Area. Updated noxious weed inventories were not conducted specifically for this Project; however, it is highly likely that noxious weeds occur in the Project Area.

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.6-1 Vegetation Cover Types - Panel F Conveyor System Area.mxd

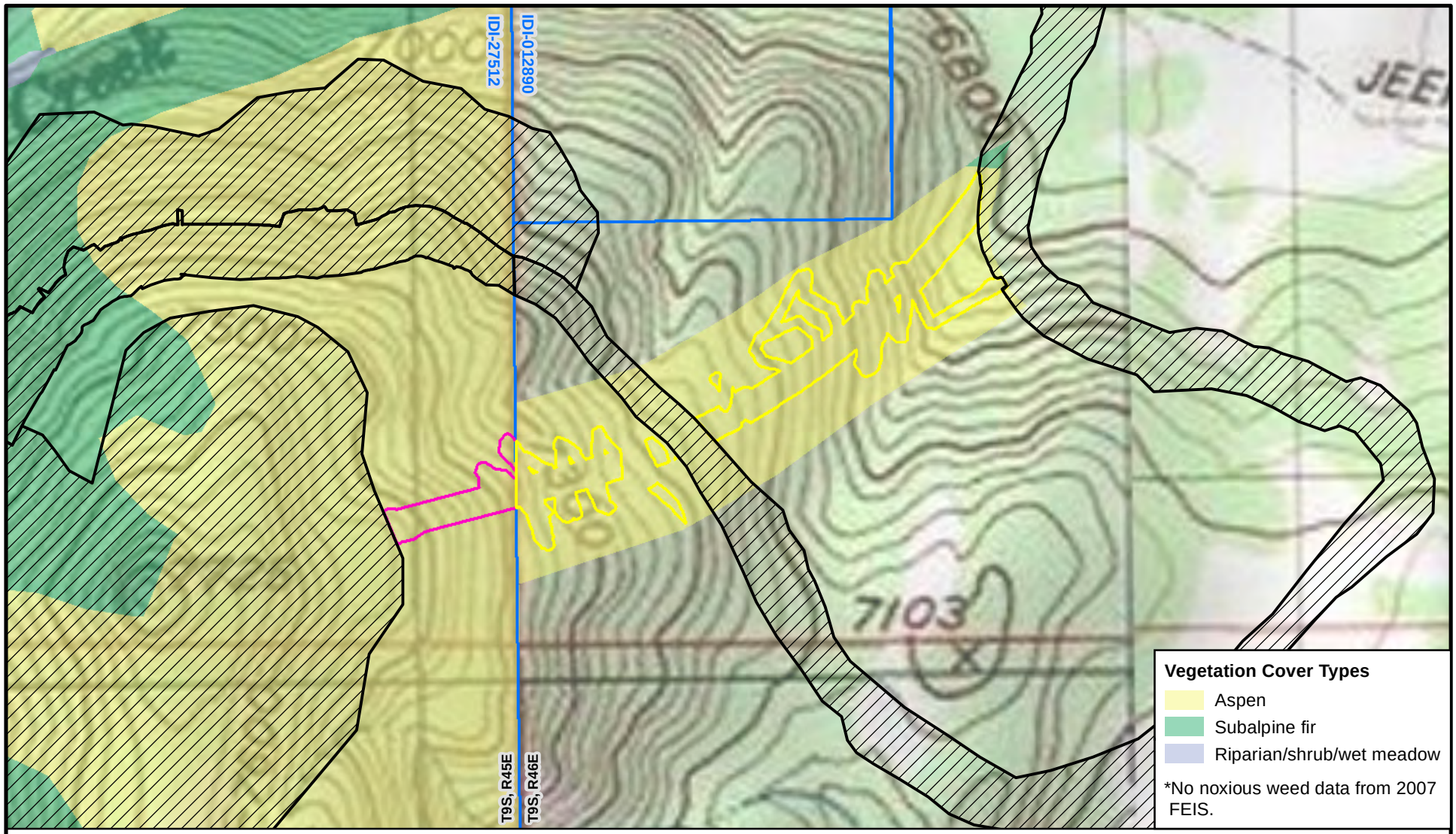


Figure 3.6-1
Vegetation Cover Types
Panel F Conveyor System Area
Panel F & G Lease/Mine Plan Modifications EIS

T9S, R45E

T10S, R45E

Lease IDI-01441

Proposed Lease Modification

Wells Canyon

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Vegetation Cover Types

- Aspen
- Aspen/conifer
- Subalpine fir
- Mountain snowberry/sagebrush
- Riparian/shrub/wet meadow
- Sagebrush (Artemisia tridentata)
- Forb/graminoid dominated

Noxious Weeds

- Canada Thistle
- Musk Thistle

N

800 0 800 Feet

Figure 3.6-2
Vegetation Cover Types
Panel G Lease Modification Area:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\Project\MXDs\Figures\Chapter 3\Figure 3.6-2 Vegetation Cover Types - Panel G Lease Modification Area Proposed Action Alternative 1.mxd

T9S, R45E

T10S, R45E

Lease IDI-01441

Wells Canyon

Proposed Lease Modification

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Vegetation Cover Types

- Aspen
- Aspen/conifer
- Subalpine fir
- Mountain snowberry/sagebrush
- Riparian/shrub/wet meadow
- Sagebrush (Artemisia tridentata)
- Forb/graminoid dominated

Noxious Weeds

- Canada Thistle
- Musk Thistle

N

800 0 800 Feet

Figure 3.6-3
Vegetation Cover Types
Panel G Lease Modification Area: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\Project\MXDs\Figures\Chapter 3\Figure 3.6-3 Vegetation Cover Types - Panel G Lease Modification Area Alternative 2.mxd

Table 3.6-1 Vegetation Cover Types, Acres, and Principal Plant Species in the Project Area

COVER TYPE	ACRES BY PROJECT COMPONENT				PRINCIPAL PLANT SPECIES	
	PANEL F - ORE CONVEYOR SYSTEM	PANEL G – PROPOSED ACTION[1] EAST ODA EXPANSION AREA	PANEL G – SOUTH ODA EXPANSION	PROPOSED ACTION[1] STORMWATER FEATURES	SCIENTIFIC NAME	COMMON NAME
Aspen	8.1	73.9	13.8	4.8	*Populus tremuloides*	Quaking aspen
Mountain Big Sagebrush	-	-	-	2.3	*Artemisia tridentata ssp. Vaseyana*	Mountain big sagebrush
					Purshia tridentata	Antelope bitterbrush
					Symphoricarpos oreophilus	Mountain snowberry
Subalpine Fir	-	19.7			*Abies lasiocarpa*	Subalpine fir
			1.8	1.0	*Pinus contorta*	Lodgepole pine
					Populus tremuloides	Quaking aspen
Aspen/Conifer	-	29.2	4.4	-	*Populus tremuloides*	Quaking aspen
					Pseudotsuga menziesii	Douglas-fir
					Pinus contorta	Lodgepole pine
Riparian Shrub/Wet Meadow	-	-	-	<0.1	*Carex nebrascensis*	Nebraska sedge
					Deschampsia caespitosa	Tufted hairgrass
					Salix boothii	Booth's willow
					Salix drummondii	Drummond's willow
					Lonicera utahensis	Utah honeysuckle
Mountain Snowberry/ Sagebrush	-	4.5	-	-	*Symphoricarpos oreophilus*	Mountain snowberry
					Artemisia tridentata ssp. Vaseyana	Mountain big sage
					Prunus virginiana	Chokecherry
					Amelanchier alnifolia	Serviceberry
					Rosa spp.	Rose
					Ceanothus velutinus	Snowbrush
Forb/Graminoid	-	3.7	-	2.2	*Delphinium bicolor*	Little larkspur
					Geranium viscosissimum	Sticky geranium
					Veratrum californicum	California false hellebore

[1] The Proposed Action footprint is the largest area potentially disturbed. See Chapter 2.

3.7 WETLANDS

3.7.1 2007 FEIS Affected Environment

This section is tiered to Section 3.6 of the 2007 FEIS, titled Wetlands (pages 3-112 through 3-119), and applicable information is hereby incorporated by reference. Although no new baseline information was collected or deemed necessary for this Project; previously identified wetlands identified in Maxim (2003; 2004e; 2004f) near the Project Area were revisited and their previously mapped boundaries rechecked in case they had changed. The following summary of information from the 2007 FEIS is specific to the Project.

3.7.1.1 Findings on Extent and Jurisdictional Status of Wetlands

The Corps exerts regulatory jurisdiction over WOUS, including wetlands, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). Section 404 of the Clean Water Act requires a Corps permit be obtained prior to discharging dredged or fill material into WOUS, which includes most perennial and intermittent rivers and streams, natural and man-made lakes and ponds, irrigation and drainage canals and ditches that are tributaries to other waters, and wetlands. Simplot currently maintains Corps permits for activities previously approved by the 2008 RODs.

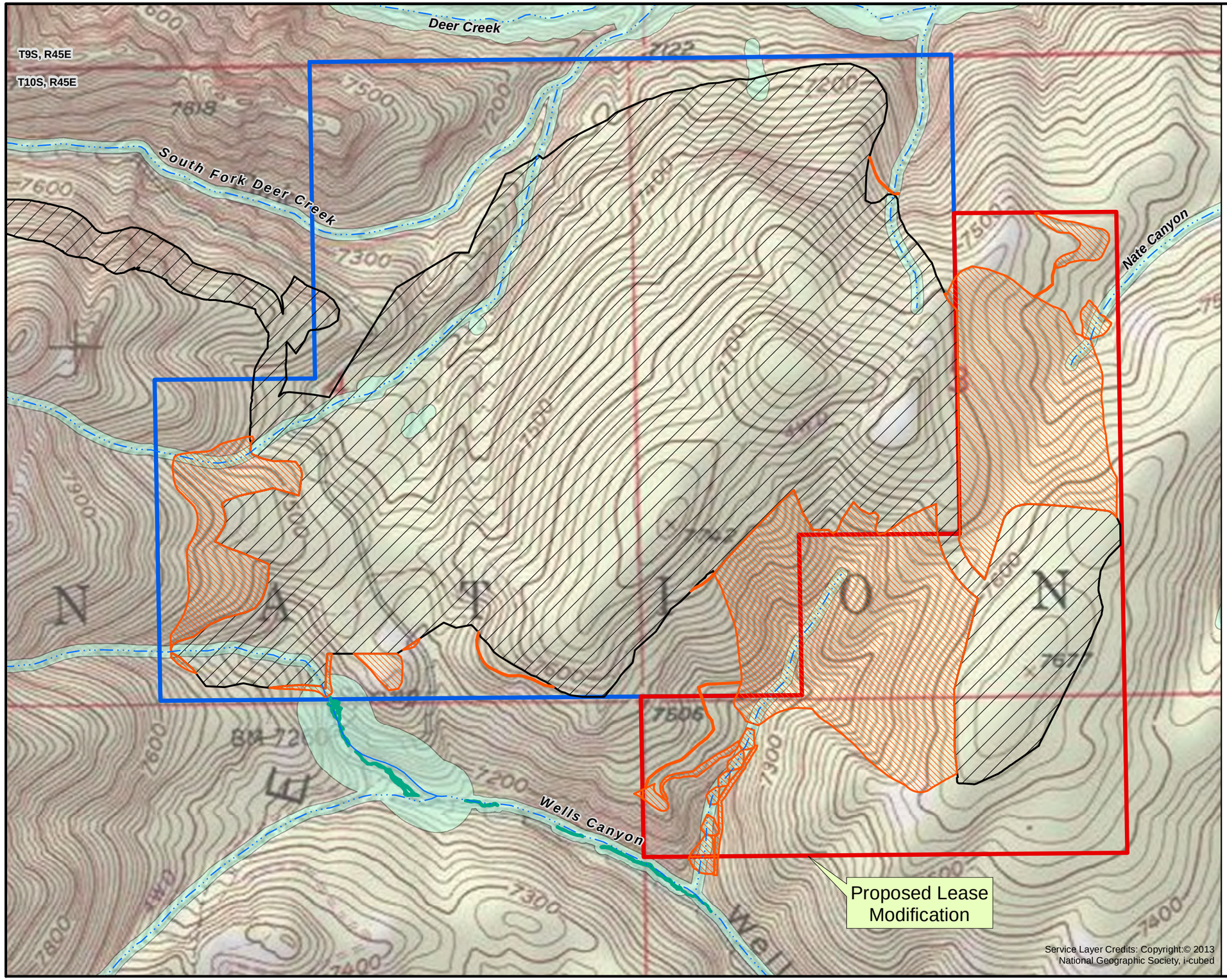
In addition to the wetland baseline surveys conducted for the 2007 FEIS, the Project Area was intensively inventoried during wildlife and soil surveys and wetland areas would have been noted and delineated if they had been observed. The findings discussed below represent the evaluation of the extent and jurisdictional status of wetlands and WOUS found in the Project Area. As displayed in **Figure 3.7-1** and **Figure 3.7-2**, only limited wetland areas occur near the Panel G area. No wetlands were identified within the Panel F portion of the Project Area.

Panel F Ore Conveyor System Area

As previously stated, no wetlands occur within the Panel F ore conveyor system area. However, the South Fork of Sage Creek, Sage Creek, and Pole Canyon Creek are three perennial creeks that the conveyor would cross over with the conveyor being situated within the footprint of the existing haul road, which currently crosses over these creeks via culverts.

Panel G Lease Modification, ODAs, GCLL, and Stormwater Control Features

Surveys conducted in 2013 identified one wetland area just south of and adjacent to the Panel G Project Area (**Figure 3.7-1**). There are three unnamed intermittent drainages in the Project Area at Panel G, but none of them have characteristics that make them potentially jurisdictional WOUS.



Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Wetlands

- Wetland Area Boundaries associated with the Project

Aquatic Resources

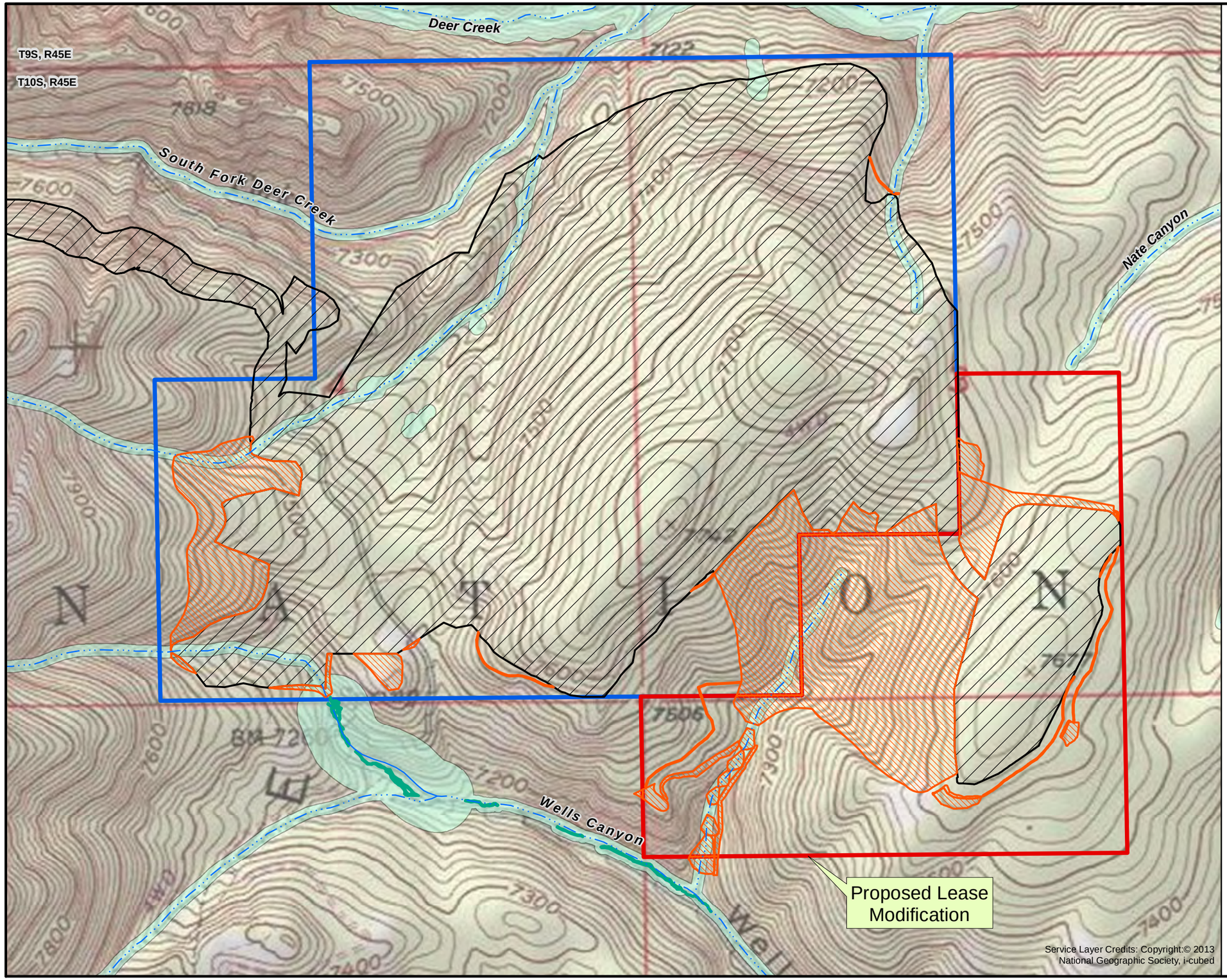
- Intermittent Stream
- Perennial Stream
- Aquatic Influence Zone

N

800 0 800 Feet

Figure 3.7-1
Wetlands and Aquatic Influence Zones
Panel G Lease Modification Area:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\Project\MXDs\Figures\Chapter 3\Figure 3.7-1 Wetlands and Aquatic Influence Zones - Panel G Lease Modification Area Proposed Action Alternative 1.mxd



Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Wetlands

- Wetland Area Boundaries associated with the Project

Aquatic Resources

- Intermittent Stream
- Perennial Stream
- Aquatic Influence Zone

N

800 0 800 Feet

Figure 3.7-2
Wetlands and Aquatic Influence Zones
Panel G Lease Modification Area: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\Project\MXDs\Figures\Chapter 3\Figure 3.7-2 Wetlands and Aquatic Influence Zones - Panel G Lease Modification Area Reduced East ODA Alternative 2.mxd

Maxim (2004f) identified one wetland area that is situated less than 20 feet outside the existing Panel G lease area southeast of the South ODA and downstream from a proposed stormwater feature disturbance (**Figure 3.7-1**). Because this previously identified wetland area was originally located so close to proposed disturbance for this Project, the wetland boundaries were resurveyed. Based upon the 2013 resurvey of the wetland boundaries, this wetland is still situated outside any proposed disturbance areas.

3.8 WILDLIFE RESOURCES

3.8.1 2007 FEIS Affected Environment

This section is tiered to Section 3.7 of the 2007 FEIS, titled Wildlife Resources (pages 3-119 through 3-138), and applicable information is hereby incorporated by reference. In addition to incorporating much of the previously collected and presented information from the 2007 FEIS as it relates to the Project Area, updated surveys for wildlife resources were conducted for the Project. These surveys included special status species such as those designated by the state, the USFS, or federally-listed. Surveys specifically for the Panel G Lease Modification Area were conducted and included a 0.5-mile buffer around the area (this survey area, including the buffer is referred to as the Study Area; see JBR 2013c). Updated surveys for the Panel F portion of the Project Area were deemed unnecessary based upon the extent of existing disturbance and ongoing mining activities in that area. A baseline technical report was prepared and provides details on the methodologies, results, and conclusions of the Study Area surveys (JBR 2013c). The information presented in this section is largely summarized from that report. Pertinent information from the 2007 FEIS is also included and cited appropriately.

3.8.2 Special Status Species

The list of federally-listed and USFS-Sensitive species that may occur in the Project Area and their state, federal (USFWS), and USFS status is found in **Table 3.8-1**.

Table 3.8-1 Federally-listed species and USFS-Sensitive species listed for the Caribou National Forest that may occur in the Project Area

COMMON NAME	SCIENTIFIC NAME	IDAHO	USFWS	USFS
Avian Species				
Bald eagle	*Haliaeetus leucocephalus*	S3B S4N		S
Boreal owl	*Aegolius funereus*	S2		S
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	S3		S/MIS
Flammulated owl	*Otus flammeolus*	S3B		S
Great gray owl	*Strix nebulosa*	S3		S
Greater sage-grouse	*Centrocercus urophasianus*	S4	C	S/MIS
Harlequin duck	*Histrionicus histrionicus*	S1B		S
Northern goshawk	*Accipiter gentiles*	S4		S/MIS
Northern three-toed woodpecker	*Picoides tridactylus*	S2		S
Peregrine falcon	*Falco peregrinus anatum*	S3		S
Trumpeter swan	*Cygnus buccinator*	S1B S2N		S

COMMON NAME	SCIENTIFIC NAME	IDAHO	USFWS	USFS
Mammal Species				
Gray wolf	*Canis lupus*	S1		S
Canada lynx	*Lynx Canadensis*	S1	T	
Pygmy rabbit	*Brachylagus idahoensis*	S2		S
Spotted bat	*Euderma maculatum*	S3		S
Townsend's big-eared bat	*Corynorhinus townsendii*	S3		S
North American Wolverine	*Gulo gulo*	S2		S
Amphibians and Reptiles				
Columbia spotted frog	*Rana luteiventris*	S4		S
Boreal (Western) toad	*Bufo boreas boreas*	S3		S

Sources: IDFG (2005) and USFS (2013).

Idaho: S1= Critically imperiled: at high risk because of extreme rarity (often 5 or fewer occurrences), rapidly declining numbers, or other factors that make it particularly vulnerable to rangewide extinction or extirpation. S2 = Imperiled: at risk because of restricted range, few populations (often 20 or fewer), rapidly declining numbers, or other factors that make it vulnerable to rangewide extinction or extirpation. S3 = Vulnerable: at moderate risk because of restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors that make it vulnerable to rangewide extinction or extirpation. S4 Apparently secure: uncommon but not rare; some cause for long–term concern due to declines or other factors. B = Breeding: conservation status refers to the breeding population of the species. N = Nonbreeding: conservation status refers to the non–breeding population of the species.

USFWS: T = Threatened: species likely to become endangered within the foreseeable future throughout all or a significant portion of its range, C = Candidate Species.

USFS: S = Sensitive: animal species identified by the Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution. MIS = Management Indicator Species.

3.8.2.1 Canada Lynx (Threatened)

The Canada lynx is currently listed as a Threatened species under the Endangered Species Act (FR 65(58):16052-16086; March 24, 2000).

Canada lynx occur in most boreal forest habitats in North America, including the classic boreal forests or taiga of northern Canada and Alaska, upper elevation coniferous forests of the Rocky Mountains and Cascade Range, and mixed coniferous-deciduous forests of southeastern Canada, New England, and the Great Lakes states (Aubry et al. 2000). The Northern Rocky Mountain/Cascades Region (38 million acres), which includes parts of the CTNF, contains the majority of lynx occurrences in the U.S. Most lynx occurrences are within moist Douglas-fir (*Pseudotsuga menziesii*) and western spruce/fir forests between 5,000 and 6,500 feet (FR 65(58):16052-16086).

Throughout North America, lynx diets in both winter and summer are dominated by snowshoe hares. In southern boreal forests, alternative prey, especially red squirrels, are important constituents of the diet. As in the taiga, lynx in southern regions are associated with boreal and sub-boreal forest conditions, including upper elevation, coniferous forests in the western mountains. In both northern and southern regions, lynx occur predominantly in habitats where snowshoe hares are abundant, especially early successional stands with high stem densities. However, in southern boreal forests, such habitats appear to be used primarily for hunting; all known den sites in southern regions were located in mature forest stands with large woody

debris. Relatively large home ranges appear to be characteristic of lynx in southern boreal forests (USFS 2007).

The Montpelier Ranger District, which includes the Study Area, has been identified as potential linkage habitat between the "core" lynx habitat in Bridger-Teton National Forest and "peripheral" habitat in the Ashley National Forest in Utah (USFS 2003b; map in USFS 2007). This potential linkage habitat does not contain boreal forest and would likely be used for movement only. The Idaho Department of Fish and Game (IDFG) Idaho Fish and Wildlife Information System (IFWIS) records (IFWIS 2013) from the last 30 years contain one observation of a female lynx with two cubs in August 2005, two miles southeast of the Blackfoot River Narrows, about 15 miles northwest of the Study Area. There are no IFWIS records of lynx within 10 miles of the Study Area in the past 30 years. However, lynx from the Colorado Division of Wildlife's lynx reintroduction program have been mapped as far north as southeastern Idaho, likely within the CNTF and near the Study Area, area based upon satellite locations between 1997 and 2007 (CPW 2010). No observations or sign of lynx were documented in the Study Area during tracking surveys in 2013.

The RFP (USFS 2003a) standards and guidelines relevant for lynx include desired future conditions, goals, and standards for vegetation (Goals 1-4 and 7, Standard 2); goals for wildlife (Goals 2, 3, and 5); and objectives and standards for lands (Objective 1, Standard 1). These standards and guidelines relate to the maintenance of suitable linkage habitat connectivity for lynx. Vegetation Standard 2 (USFS 2003a), the most specific prescription, states that in each 5th forested hydrologic unit code (HUC), the combination of mature and old age classes shall be at least 20 percent of the forested acres and that at least 15 percent of all forested acres in the HUC are to meet or be actively managed to attain old growth characteristics.

3.8.2.2 Bald Eagle (Sensitive)

The bald eagle is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, breeding bald eagles are classified as "Vulnerable" (S3) and non-breeding bald eagles are classified as "Apparently Secure" (S4; IDFG 2005). The bald eagle was removed from the Endangered Species List (as Threatened) on July 9, 2007 (Federal Register 72 (130):37345-37372; effective August 8, 2007) in the lower 48 States.

Bald eagle nests and communal night roosts are usually located in tall trees near water bodies that support an adequate food supply. Fish, waterfowl, rabbits, and carrion (including big game carrion in Idaho) comprise the majority of the diet.

According to the IFWIS, bald eagles were observed at the confluence of Deer Creek and North Fork Deer Creek in 2003. Suitable roosting habitat for bald eagles exists along Crow Creek, which is surveyed annually during winter. One adult bald eagle was counted on the Crow Creek midwinter bald eagle survey route by the USFS in January 2012 and two adults were counted in January 2013 (JBR 2013c). One bald eagle was observed during tracking surveys in 2013.

RFP Standards and Guidelines for occupied nesting zones, primary use areas, and home ranges (USFS 2003a) do not apply because there is no nest within 2.5 miles of the Project Area. Guidelines related to minimizing conflicts with bald eagle winter foraging habitat, roosting habitat, and power lines would apply.

3.8.2.3 Boreal Owl (Sensitive)

The boreal owl is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, boreal owls are classified as "Imperiled" (S2; IDFG 2005).

In the Rocky Mountains, boreal owls are typically found in subalpine forest habitats characterized by subalpine fir (*Abies lasiocarpa*) or Engelmann spruce (*Picea engelmannii;* Hayward 1994). Studies in Idaho found that boreal owl nesting sites were concentrated in mixed-conifer and aspen (*Populus tremuloides*) forests with no nesting in lodgepole pine (*Pinus contorta*) forests and infrequent nesting in spruce-fir. In general, no single vegetation type provided all resources used by boreal owls, implying a complex pattern of habitat use (Hayward 1994).

The IFWIS data show no known recorded observations for boreal owls within 10 miles of the Study Area. The Study Area contains suitable habitat and boreal owls may occur year-round. No boreal owl callbacks were heard during surveys in 2013.

The single boreal owl-specific RFP Guideline (USFS 2003a) is to maintain 40 percent of the forested acres in mature and old age classes within a 3,600-acre area around nest sites.

3.8.2.4 Columbian Sharp-tailed Grouse (Sensitive and MIS)

The Columbian sharp-tailed grouse is a USFS-Sensitive species and Management Indicator Species (MIS) for grassland and open canopy sagebrush habitat (USFS 2003a). In the State of Idaho, Columbian sharp-tailed grouse are classified as "Vulnerable" (S3) IDFG 2005). USFWS found listing was not warranted for the sharp-tailed grouse in 2006 (Federal Register 71 (224) 21 November 2006: 67318–67325).

Columbian sharp-tailed grouse occur in habitats generally characterized by dense herbaceous cover and a mixture of shrubs. Habitat requirements in winter are narrower; sharp-tailed grouse often rely on riparian areas or deciduous hardwood shrub stands (IDFG 2005). In southeast Idaho, Columbian sharp-tailed grouse are reasonably widespread in shrub and grass habitats adjacent to or in mountainous foothills (IDFG 2005). No leks have been documented on CNF system lands, although several occur adjacent to the CNF land (USFS 2003b). Elevations on the CNF are relatively high for suitable spring, summer, and fall habitat for sharp-tailed grouse. However, suitable winter habitat consisting of aspen, chokecherry (*Prunus virginiana*), and serviceberry (*Amelanchier* sp.) is present. Sharp-tailed grouse may be present in suitable or marginally suitable habitat year-round.

The BLM observed two sharp-tailed grouse in May 2010 and a single sharp-tailed grouse in May 2011, near the "Slug Creek 2" lek that is approximately nine miles northwest of the Study Area (JBR 2013c). The IFWIS database did not contain any records of Columbian sharp-tailed grouse within 10 miles of the Study Area. The Study Area provides suitable habitat, although sign was not observed during surveys in 2013.

Regarding standards and guidelines for sharp-tailed grouse, the RFP defers to "current guidelines for sage and sharp-tailed grouse management" (e.g., Connelly et al. 2000) to be used as a basis for sagebrush treatments. As a MIS, sharp-tailed grouse populations are used to measure the health of their habitat on the CNF and vice versa. However, as stated in the 2007 FEIS, impacts to grassland and open canopy sagebrush habitat (USFS 2003a) will not be used as a measurement of impacts to sharp-tailed grouse because nesting in the Project Area is not

expected. Other RFP Guidelines related to sharp-tailed grouse direct that projects within two miles of a known sharp-tailed grouse lek should be evaluated for potential habitat impacts to sharp-tailed grouse, and that disturbances should be limited during the breeding (March–May) and nesting (May–June) seasons if sharp-tailed grouse are present. The Idaho Sharp-tailed Grouse Conservation Plan (Ulliman et al. 1998) recommends that in winter habitat, treatments should be limited to 20 percent of the area, leaving 80 percent available for winter forage.

3.8.2.5 Flammulated Owl (Sensitive)

The flammulated owl is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, breeding flammulated owls are classified as "Vulnerable" (S3; IDFG 2005).

Flammulated owls are small, secretive owls that nest in cavities and feed exclusively on insects. Flammulated owls occur year-round in cold temperate and semi-arid climates, in areas with open forest structure and some dense foliage, and with a high abundance or diversity of insect prey. Owls migrate following the availability of insect prey. Flammulated owls appear to occupy warm microclimates within mid-elevation conifer woodland habitats, either in response to prey availability or thermoregulation (McCallum 1994).

The Panel G portion of the Project Area contains suitable habitat, and flammulated owls may occur in spring, summer, or fall. The IFWIS data contain three flammulated owl observations near the Panel G portion of the Project Area from May 2003. Four flammulated owl callbacks were heard during three separate survey days in 2013, all outside of the Project Area but within the Study Area. No nests were ever identified. RFP Guidelines for flammulated owl habitat (USFS 2003a) state that no timber activities are allowed within a 30-acre area around nest sites.

3.8.2.6 Great Gray Owl (Sensitive)

The great gray owl is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, great gray owls are classified as "Vulnerable" (S3; IDFG 2005).

Great gray owls occur in mid- to high-elevation conifer forests, nesting in mature forest stands that contain snags. In southeast Idaho, nests have been found in mid- to late-succession Douglas-fir forests near clear-cuts or natural meadows. The vast majority of sightings of great gray owls in Idaho are in the lodgepole pine / Douglas-fir / aspen zone. Open forested stands of Douglas-fir and aspen interspersed with open meadows and clearcuts within portions of the Project Area may provide suitable habitat for great gray owls.

The IFWIS data contain eighteen observations of great gray owl within 10 miles of the Project Area, including one within the 2013 Study Area (but not within the actual Project Area), several five miles west of the Study Area, and a large cluster five miles north. The Project Area contains suitable habitat and great gray owls may occur year-round. However, no callbacks were heard during surveys in 2013.

3.8.2.7 Greater Sage-Grouse (Candidate, Sensitive, and MIS)

The greater sage-grouse is a Candidate species for federal listing as well as a USFS-Sensitive species and a MIS for high-quality sagebrush habitat (USFS 2003a). In the State of Idaho, greater sage-grouse are classified as "Apparently Secure" (S4; IDFG 2005). On January 12, 2005, the USFWS announced a 12-month finding for three petitions to list greater sage-grouse as threatened or endangered was not warranted. On December 4, 2007 the U.S. District Court of

Idaho ruled that the 12-month petition finding was in error. The USFWS also determined that a new status review was appropriate in order to address new information that had become available since the 2005 finding (specifically, information published since Connelly et al. 2004). The USFWS found on March 5, 2010 that listing the greater sage-grouse (range-wide) was warranted, but that listing was precluded by higher-priority listing actions. The greater sage-grouse was assigned a Candidate Listing Priority Number of 8, where 1 is the highest priority (Federal Register 75 (55) March 23, 2010:13910-14014).

On December 27, 2011, the BLM issued Instruction Memorandum (IM) No. 2012-043 and No. 2012-044 to provide interim management policies and procedures for greater sage-grouse to be applied to ongoing and proposed authorizations and activities that affect the species and its habitat. These IMs supplement IM No. 2010-071 and are consistent with IM No. 2011-138, which also are related to management of greater sage-grouse. The IM applies for BLM actions within Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). PPH areas have been identified as having the highest conservation value to maintaining sustainable greater sage-grouse populations. These areas would include breeding, late brood-rearing, and winter concentration areas. PGH areas are areas of occupied seasonal or year-round habitat outside of priority habitat. The data and maps for these two habitat areas were developed through a collaborative effort between the BLM and the respective state wildlife agencies. The IM (No. 2012-44) provides interim conservation policies and procedures specifically for PPH and PGH areas. Based upon a review of the most current Geographic Information System (GIS) data from the Idaho BLM (obtained from Idaho's Geospatial Data Clearinghouse website on January 2, 2014), the closest PGH area occurs approximately eight miles northeast of the Study Area at Panel G within the Tygee Creek area. The closest PPH occurs approximately 11 miles to the southeast.

Greater sage-grouse depend on sagebrush, particularly big sagebrush (*Artemisia tridentata*) and silver sagebrush (*A. cana*), for food and cover year-round. Sage-grouse utilize riparian and upland meadows and sagebrush grasslands during summer, sagebrush-dominated rangelands with herbaceous cover during breeding (lekking, nesting, and early brood-rearing), and upland meadows, riparian areas, greasewood bottoms, and agricultural fields in addition to sagebrush during autumn (Connelly et al. 2004).

Breeding occurs on “leks” or openings surrounded by sagebrush in broad valleys, ridges, benches, and plateaus or mesas. Lek sites generally have good visibility (for predator detection), acoustical qualities (so mating sounds will carry), and an abundance of sagebrush within about 300 to 660 feet (for escape cover). Hens build nests at the base of a live sagebrush plant and remain in sagebrush vegetation with chicks until conditions are too dry, at which point hens with broods move towards wet meadow or riparian areas. Preferred nest habitats are those with live sagebrush along the periphery for escape cover. Early brood-rearing habitat is generally identified as sagebrush habitat surrounding each lek (for at least 3 kilometers (km)).

Sage-grouse in southeastern Idaho moved as far as 82 km from breeding and nesting sites to summer ranges (Connelly et al. 1988). In addition, female sage-grouse showed fidelity to nesting areas over consecutive years in southeastern Idaho (Fisher et al. 1993).

Several sage-grouse leks occur approximately 10 miles northwest of the Study Area near Slug Creek. No leks are known in the vicinity of the Study Area, although sagebrush-covered hillsides provide suitable habitat. Sage-grouse have been observed along Crow Creek in the past. Sage-

grouse pellets were observed in the Study Area and just east of the Panel G Lease Modification area while walking through the sagebrush habitat in 2013, although no birds were flushed or observed.

RFP standards and guidelines for sage-grouse are extensive and are described in USFS 2003a. As a MIS, sage-grouse populations are used to measure the health of sagebrush habitat on the CNF and vice versa, thus impacts to sagebrush habitat are used as a measurement of impacts to sage-grouse (USFS 2003a). Other RFP Guidelines related to sage-grouse direct that projects within 10 miles of a known sage-grouse lek should be evaluated for potential habitat impacts to sage-grouse, and that disturbances should be limited during the breeding (March–May) and nesting (May–June) seasons if sage-grouse are present.

3.8.2.8 Harlequin Duck (Sensitive)

The harlequin duck is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, breeding harlequin ducks are classified as "Critically Imperiled" (S1; IDFG 2005).

Harlequin ducks are sea ducks that migrate inland to breed. Breeding occurs along clear, swiftly-flowing streams. In Idaho, harlequin ducks feed primarily on benthic macroinvertebrates and use second-order or larger streams containing reaches with an average 1-7 percent gradient, riffle habitat, clear water, gravel- to boulder-sized substrate, and forested bank vegetation (IDFG 2005). Harlequin ducks are not expected to occur on the CNF (USFS 2003b), and there is no suitable or potential harlequin duck habitat in the Study Area (USFS et al. 2013; BLM and USFS 2007) or Project Area. This species will not be discussed further in this EIS.

3.8.2.9 Northern Goshawk (Sensitive and MIS)

The northern goshawk is a USFS-Sensitive species and a MIS for mature and old growth forest structure (USFS 2003a). In the State of Idaho, northern goshawks are classified as "Apparently secure" (S4) (IDFG 2005).

Northern goshawks inhabit montane coniferous and deciduous forests, forest edges, and open woodland stands. In Idaho, goshawks nest in coniferous and aspen forests, and spend winter in riparian or agricultural areas (Groves et al. 1997). Published descriptions of goshawk nests suggest that nest-site selection is predictable. In a western Montana and northern Idaho study, goshawks nested in mature conifer forest with a closed canopy (75-85 percent cover); on a moderate (15-35 percent), north facing slope; at or near the bottom of a hillside, with a relatively open understory to allow flight below the canopy; and with water and a large forest opening generally within 0.5 km of the nest (Hayward and Escano 1989).

Between 1991 and 2003, nine observations of northern goshawks within 10 miles of the Study Area are recorded in the IFWIS database (IFWIS 2013). More recent nest monitoring near the Study Area occurred at a historic goshawk territory on Sage Creek, which was found to be unoccupied (i.e., no active nests or goshawk activity) in 2009, 2010, and 2012 (Dobrich 2010, 2013). A territory within Smoky Canyon Mine Panel D (where habitat has been disturbed within a one-mile radius surrounding the historic nest point) was monitored in 2011 and 2012, but no active nests were found (Dobrich 2012, 2013). The Study Area contains suitable habitat and goshawks may use the area year-round. No observations or callbacks were heard during surveys in 2013 and no nests or historical nesting territories for northern goshawks are known to occur within the Study Area.

RFP Standards and Guidelines for the goshawk are extensive and are described in USFS (2003a). As an MIS, goshawk populations are used to measure the health of their habitat on the CNF and vice versa, thus impacts to mature and old growth forest habitat are used as a measurement of impacts to goshawk (USFS 2003a). One RFP guideline for goshawks states that forest openings larger than 40 acres should not be created in order to preserve foraging and post-fledgling family areas in active or historical nesting territories. In addition, mechanical treatments cannot occur within a 400-acre area around active northern goshawk nests between March and September (USFS 2003a).

3.8.2.10 Peregrine Falcon (Sensitive)

The peregrine falcon is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, peregrine falcons are classified as "Vulnerable" (S3; IDFG 2005).

Peregrine falcons occupy a wide range of habitats, but are typically found in open country near rivers, marshes, lakes, and coasts. Foraging habitat includes wetlands and riparian habitats, meadows and parklands, croplands and orchards, gorges, mountain valleys, and lakes that support good populations of small- to medium-sized terrestrial birds, shorebirds, and waterfowl. Cliffs are preferred nesting sites, although reintroduced birds now regularly nest on man-made structures such as towers and high-rise buildings (USFS 2003b).

There are historical, but currently unoccupied, nesting cliffs, as well as other potentially suitable nesting cliffs on the CNF. As numbers of peregrines increase in Idaho, some of these cliffs may become occupied. There is no suitable habitat for peregrine falcons in the Study Area (USFS et al. 2013; BLM and USFS 2007). The closest known eyries are located at Grays Lake, Grays Ridge, and at Soda Springs, all of which are located over 20 miles north or northwest of the Project Area (USFS 2003b).

RFP Standards and Guidelines (USFS 2003a) require that activities or habitat alterations be minimized within two miles of peregrine falcon nest sites, as that use of herbicides or pesticides (which could cause eggshell thinning) be prohibited within 15 miles of nest sites.

3.8.2.11 Northern Three-toed Woodpecker (Sensitive)

The northern three-toed woodpecker is a USFS-Sensitive species (USFS 2003a) and in the State of Idaho, three-toed woodpeckers are classified as "Imperiled" (S2; IDFG 2005).

Northern three-toed woodpeckers are year-round residents of high-elevation, spruce-fir forests, with populations increasing in response to spruce bark beetle outbreaks (Hill 2002, Koplin 1969). The highest densities of woodpeckers tend to occur in freshly burned areas (zero to three years post-burn), and generally in areas with a high density of lightly burned trees (IDFG 2005). Three-toed woodpeckers typically nest in snags, where they excavate cavities, and may return to the same territory in succeeding years (Hill 2002).

The IFWIS data (2013) contain four observations, made between 2000 and 2003, of northern three-toed woodpeckers within 10 miles of the Project Area. Suitable nesting and foraging habitat for three-toed woodpeckers is present in the Project Area. Three-toed woodpeckers were heard in the 2013 Study Area on two different survey days in 2013.

RFP Standards and Guidelines for three-toed woodpeckers are related to maintaining snag habitat (see USFS 2003a). However, Prescription 8.2.2(g) – Phosphate Mine Areas, which

allows for phosphate mining to occur on existing leases, states that snag habitat for woodpeckers shall not be a management consideration.

3.8.2.12 Trumpeter Swan (Sensitive)

The trumpeter swan is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, breeding trumpeter swans are classified as "Critically Imperiled" (S1) and non-breeding trumpeter swans are classified as "Imperiled" (S2; IDFG 2005).

In Idaho, trumpeter swans breed on marshes, lakes, and beaver ponds, and wintering occurs along shallow, slow-moving waters. Trumpeter swans forage on submerged and emergent vegetation and aquatic insects (Groves et al. 1997). There are typically 100 adult birds in southeast and south central Idaho during the breeding season. They may nest at or near Grays Lake (over 20 miles north), Soda Springs (over 20 miles northwest), or Bear Lake National Wildlife Refuge (25 miles south; IDFG 2005).

Eight trumpeter swans were observed in 2012 approximately 1.5 miles east of the Study Area (on a small pond south of Crow Creek Road near Camel Hollow) during midwinter bald eagle surveys conducted by USFS along Crow Creek in 2012. Three adults and one cygnet were observed during the same survey in 2013 at Books Springs, approximately one mile east of the Study Area. Trumpeter swans were not observed in the Study Area during baseline surveys in 2013. There is no suitable breeding habitat containing marshes, lakes, or streams of sufficient size for trumpeter swan on USFS land within the Study Area; therefore, the species will not be discussed further in this EIS.

3.8.2.13 Gray wolf (Sensitive)

As of September 30, 2012, the gray wolf is no longer protected under the Endangered Species Act in any state. Thus, wolves within the previously-named Northern Rocky Mountain distinct population segment (DPS) area, which included wolves in Idaho, are no longer considered or protected as part of the Greater Yellowstone nonessential experimental population (Federal Register 77 (175) September 10, 2012:55530-55604).

Wolves are sociable animals, frequently traveling and hunting in packs of 2-12 wolves. Packs typically occupy and defend territories of 20–214 square miles from other wolf packs. Wolves prey on a wide variety of mammals, including white-tailed deer (*Odocoileus virginianus*) and mule deer (*O. hemionus*), elk (*Cervus canadensis*), caribou (*Rangifer* sp), bighorn sheep (*Ovis canadensis*), mountain goats (*Oreamnos americanus*), and beaver (*Castor canadensis*). Idaho wolf numbers in the formerly-named Northern Rocky Mountain DPS area have grown steadily since the mid-90s and have stabilized to around 1,700 wolves as of 2010 (USFWS et al. 2011).

There are no established packs or breeding pairs on the CNF (USFWS et al. 2011). However, any habitat in the Project Area could provide year-round movement routes for wolves. The Project Area provides both suitable habitat and prey base for wolves (USFS et al. 2013; BLM and USFS 2007). No observations or sign of wolves were documented in the Study Area during tracking surveys in 2013.

3.8.2.14 Pygmy Rabbit (Sensitive)

The pygmy rabbit is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, pygmy rabbits are classified as "Imperiled" (S2; IDFG 2005). Pygmy rabbits in Idaho are not part of the Columbia

Basin distinct population segment that is on the Endangered Species List. USFWS conducted a status review of pygmy rabbit in 2010 and found that listing was not warranted (Federal Register 75(189) September 30, 2010:60516-60561).

Pygmy rabbits are limited to habitat characterized by deep, friable soils and tall (often greater than six feet), dense sagebrush, which provides both food (95 percent of the diet) and cover. Burrows are usually located on slopes at the base of sagebrush plants. No occupied habitat has been found on the CNF. There is no suitable habitat for pygmy rabbits in the Project Area (USFS et al. 2013; BLM and USFS 2007) and the Project Area is just outside the known range of the species (mainly south and central Idaho; Federal Register 75(189) September 30, 2010:60516-60561). This species will not be discussed further in this EIS.

3.8.2.15 North American Wolverine (Sensitive)

The North American wolverine is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, North American wolverines are classified as "Imperiled" (S2; IDFG 2005). On December 14, 2010, the USFWS found the petition to list the wolverine as Threatened or Endangered "not warranted." (Federal Register 75 (239) December 14, 2010:78030-70861). The USFWS had more recently proposed to list this species as Threatened but subsequently withdrew the proposal on August 12, 2014.

In North America, wolverines occur within a wide variety of arctic and alpine habitats, but primarily boreal forests, tundra, and mountains. The southern portion of their range extends into Idaho (Federal Register 73 (48); March 11, 2008:12929-12941). A general trait of areas occupied by wolverines is their remoteness from humans and human developments (Banci 1994). Wolverines have very large home ranges relative to their body size and require large areas to forage (Banci 1994; Federal Register 75 (239) December 14, 2010:78030-70861). In addition, in Idaho, natal den sites occur above 8,200 feet on rocky sites, such as north-facing boulder talus or subalpine cirques (steep-walled semicircular basin carved by a glacier), in forest openings (Magoun and Copeland 1994 as cited in Federal Register 78 (23) February 4, 2013: 7863-7890). Based upon the fact that these types of habitat do not occur within the Study Area, the potential for denning by wolverines within the Study Area is non-existent.

Wolverines have been confirmed within the CTNF at the following locations: 1) approximately 25 to 30 miles north-northwest of the Study Area in the vicinity of Caribou Mountain on the north end of the Caribou portion of the forest, 2) along the divide between Mink Creek and Liberty Creek in the Bear River Range (Maxim 2004g), and 3) approximately 5 miles north of the Study Area in Smoky Canyon (IFWIS 2014). Denning and foraging habitat is present in the Project Area (USFS et al. 2013; BLM and USFS 2007) and wolverines may travel through the Project Area year-round. No observations or sign of wolverines were documented during winter tracking surveys of the Study Area in 2013.

3.8.2.16 Spotted Bat (Sensitive)

Spotted bats are a USFS-Sensitive species (USFS 2003a). In the State of Idaho, spotted bats are classified as "Vulnerable" (S3; IDFG 2005).

Spotted bats are rare and their distribution is highly fragmented. The limiting factor to their occurrence is most likely suitable roost sites (rock and cliff crevices) and human disturbance. Spotted bats usually occur in deep, narrow canyons, and roost in cracks or crevices within the

rocky outcrops and cliffs (IDFG 2005). In Idaho, spotted bats occur mainly in the southwest corner of the state (Perkins and Peterson 1997). Dominant vegetation types in Idaho include sagebrush, juniper, mountain mahogany, and cottonwood (IDFG 2005). In 2003, one spotted bat was recorded in south-central Idaho, just west of Almo (City of Rocks; Rodhouse et al. 2009).

The IFWIS database does not contain any records of spotted bats within 10 miles of the Study Area. Suitable cliffs (roost sites) are not present within or near the Study Area (USFS et al. 2013; BLM and USFS 2007) and spotted bats were not detected during the Anabat survey in 2013 (JBR 2013c).

3.8.2.17 Townsend's Big-eared Bat (Sensitive)

The Townsend's big-eared bat is a USFS-Sensitive species (USFS 2003a). In the State of Idaho, Townsend's big-eared bats are classified as "Vulnerable" (S3; IDFG 2005).

Townsend's big-eared bats occur in much of western North America, in a variety of habitats from desert shrub to deciduous and coniferous forest, and over a wide range of elevations. However, the species' distribution is strongly correlated with the availability of caves or cave-like roosting habitat such as abandoned mines (Pierson et al. 1999).

Past surveys within the CNF have found Townsend's big-eared bats in the Bear River Range, Pruess Range, Portneuf Range, and Elkhorn Mountains (USFS 2003b). Surveys conducted in the Montpelier Ranger District found five mines and caves with low numbers of Townsend's big-eared bats during the summer and 11 mines and caves with low numbers during the winter (USFS 2003b). No suitable maternity or hibernacula habitat is present in the Study Area as the Study Area does not contain caves (USFS et al. 2013; BLM and USFS 2007). Townsend's big-eared bats were detected about ten miles northwest of the Study Area in 2009 (JBR 2012). Snags in the Study Area and Project Area are suitable for roosting and big-eared bats may forage or roost in the Study Area and Project Area during spring, summer, or fall. Townsend's big-eared bats were not detected during the Anabat survey in 2013.

3.8.2.18 Columbia Spotted Frog (Sensitive)

The Columbia spotted frog is a USFS-Sensitive species (USFS 2003a). In Idaho, Columbia spotted frogs are classified as "Apparently Secure" (S4; IDFG 2005).

Spotted frogs require habitat components for hibernation (water-flooded burrows), breeding (pooled water), foraging (shallow pond margins), and migrating between breeding and hibernation sites (corridors containing water and vegetative cover such as wet meadows; USFWS 2006).

Columbia spotted frogs do not occur in southeast Idaho (USFS et al. 2013; BLM and USFS 2007) and this species will not be discussed further in this EIS.

3.8.2.19 Boreal (Western) Toad (Sensitive)

The western toad is a USFS-Sensitive species as of March 2010. The western toad is classified as "Vulnerable" (S3; IDFG 2005).

Western toads are found in a variety of habitats such as desert springs and streams, meadows and woodlands, and in and around ponds, lakes, reservoirs, and slow-moving waterways. Breeding areas are typically shallow water areas at the edges of ponds, or lakes, stream or river edges with

slow-moving water, or other flooded or ponded areas (Keinath and McGee 2005). After breeding, western toads move to more terrestrial habitats and eventually to hibernacula that may be a substantial distance from the breeding site (up to 2.5 km, but usually much less; Keinath and McGee 2005). Western toads dig a burrow in loose soil or use burrows of small mammals (Groves et al. 1997) and remain in hibernation until the following spring.

Boreal toads are a subspecies of Western toads and share most, if not all, of their traits. Five boreal toad subspecies have been documented through mitochondrial deoxyribonucleic acid (DNA) analyses, with one of the five groups identified as specific to Caribou County, Idaho (Hogrefe et al. 2005). The boreal toad occupies relatively high-elevation habitats compared to other western amphibians, ranging from 5,000 to 10,000 feet above sea level. Occupied wetlands are surrounded by a variety of upland vegetation communities, including sagebrush and grasslands, pinyon-juniper, mountain shrubs, and coniferous forest (Hogrefe et al. 2005).

The closest known location of boreal toads is in Sage Meadows (USFS et al. 2013; BLM and USFS 2007), about three miles north of the Panel G portion of the Project Area and less than two miles west of the Panel F portion of the Project Area. The IFWIS database (2013) contains three observations of western toad in Sage Meadows.

3.8.3 Migratory Birds

A wide variety of migratory birds are found on the CNF, and many species are expected in the Project Area. Migratory birds are protected by the Migratory Bird Treaty Act (MBTA) of 1918, which prohibits the "take" of any migratory bird (16 U.S.C. 703-712). In January 2001, outgoing President Clinton signed Executive Order 13186 that required some federal agencies, including USFS, to develop an MOU with the USFWS to promote the recommendations of various migratory bird programs and conservation considerations. The USFS developed an MOU with USFWS in 2008 (USFS 2008).

Coordinated implementation plans at the regional and state levels can be used to assist federal agencies with implementation of the MOU. The Intermountain West Joint Venture (IWJV) was established in 1994 as the eleventh habitat joint venture intended to coordinate implementation of the North American Waterfowl Management Plan. The IWJV first adopted an Implementation Plan in 1995 to provide a framework for implementing the North American Waterfowl Management Plan in Idaho and other states of the Intermountain West; the plan has since been updated (IWJV 2005). Director's Order 146, which indicated that joint ventures should "deliver the full spectrum of bird conservation," was issued on September 12, 2002 by the USFWS Director under President Bush.

The Partners in Flight (PIF) organization began in 1988 as a coordinated, nationwide effort to document and reverse apparent declines in neotropical migratory birds and was later expanded to include all nongame land birds. The PIF chapter in Idaho was formed in 1992, and in 2000 released Version 1.0 of the Bird Conservation Plan (BCP), based on an assessment of 243 species of breeding birds in Idaho, including 119 species of neotropical migrants (Ritter 2000).

The Idaho BCP (Ritter 2000) identifies riparian, wetlands not associated with rivers, and sagebrush as high priority habitats for migratory birds. The Coordinated Implementation Plan for Bird Conservation in Idaho (IWJV 2005) was revised and updated to include aspen woodlands as priority habitats.

Riparian vegetation make up less than one percent of the Project Area. Riparian vegetation can be found along perennial, intermittent, and ephemeral streams, including those associated with Wells Canyon. Wet/mesic meadow areas can also be found as isolated seeps and springs in the 2013 Study Area, but outside the Project Area. These areas provide important habitat components for migratory birds.

The Panel G portion of the Project Area does include sagebrush vegetation. Sagebrush is present mainly on dry, south-facing slopes in the Panel G portion of the Project Area that are north of Deer Creek, the South Fork of Deer Creek, and Wells Canyon Creek. Sagebrush provides nesting sites and cover for many species of migratory birds.

A large portion of the Panel G portion of the Project Area is comprised of aspen vegetation; either aspen or mixed conifer/aspen cover most of the Study Area and Project Area slopes. Large aspen trees provide potential nesting for cavity-nesting birds.

Snag habitat is important for some migratory birds that nest in forests, such as cavity nesters (e.g., woodpeckers) and raptors. Snag habitat is present in the Project Area and provides potential nesting and foraging habitat for migratory birds.

3.8.4 Mammals

Several mammal species are known or expected to occur within the Project Area. These species include various bats, rabbits, chipmunks, squirrels, and gophers, as well as large game animals such as Rocky Mountain elk (*Cervus canadensis*), moose (*Alces alces*), mule deer (*Odocoileus hemionus*), black bear (*Ursus americana),* and mountain lion (*Felis concolor*; Groves et al. 1997; IDFG 2009; USFS 2003b). Mammals are present year-round in the Project Area.

3.8.4.1 Big Game

Mule deer and Rocky Mountain elk are the most visible big game species in the Project Area, and can be found year-round. However, there is no big game winter range or critical winter range within the Project Area, as the mapped winter range occurs north of the Panel G portion of the Project Area and south of the Panel F apportion of the Project Area (see Figure 3.7-1 in the 2007 FEIS), and east within the Crow Creek Valley. Mule deer and elk are no longer MIS under the RFP; however, elk and deer are important species for the local economy and public interest. Moose are included in this discussion due to sympatric relationships with elk and deer within the general area and in surrounding habitats of southeast Idaho. These species are discussed in more detail in the following sections.

Elk

Elk are classified as habitat generalists and are distributed throughout Idaho. Elk diets vary geographically and seasonally. They are primarily grazers, although they consume forbs in summer, and browse on willow and aspen in the absence of available grasses.

The Diamond Creek Zone, which contains Management Units 66A and 76, is some of the most productive elk habitat in southeastern Idaho (IDFG 2011a). Unit 76 encompasses the Project Area, extending east from Soda Springs to the Wyoming border.

Many elk populations do not make long-range movements between seasonal ranges. Kuck (1984) found that in the Deer Creek, summer and winter use areas are typically adjacent, and movements often overlap seasonally. Most often, elk used southerly and western aspects with

slopes less than 20 degrees as winter range (Kuck 1984). IDFG reports (2011a) that as populations have increased, elk have been using wintering areas outside of Unit 76. Bulls in particular can winter almost anywhere during a mild winter, including lands within both the Panel F and Panel G portions of the Project Area (Corey Class, IDFG Wildlife Biologist, Pocatello, Idaho, personal communication). Elk have been observed using winter range situated north and east of the Panel G portion of the Project Area, and south and east of the Panel F apportion of the Project Area (Corey Class, IDFG Wildlife Biologist, Pocatello, Idaho, personal communication).

Surveys of elk populations in Management Unit 76 conducted by IDFG provided population estimates of 3,116 elk in 2002; 3,613 elk in 2005; and 2,220 elk in 2008 (IDFG 2011a). The most recent aerial survey of Unit 76 (2008) indicates that the elk population is below objectives for cows, bulls, and adult bulls (IDFG 2011a).

The 2011 summary report states that although Unit 76 could support a higher wintering population of elk, it would be at the expense of significant depredation concerns as well as elk increasingly occupying mule deer winter ranges (IDFG 2011a).

Mule Deer

Mule deer are the most abundant and widely distributed big game animal in Idaho (Groves et al. 1997). Typical mule deer habitat consists of coniferous forests, shrub steppe, grasslands with shrubs, and chaparral. They are primarily browsers, and much of their diet is twigs and leaves of shrubs and trees, especially in the winter (USFS 2003b).

Winter range is a critical component of mule deer habitat. Mule deer are highly susceptible to high mortality during periods of prolonged deep snow and low temperatures. The condition of a deer at the start of winter depends on the quality of the habitat it occupies during the rest of the year. The winter strategy is to minimize energy loss (becoming sedentary and using thermal cover) and to eat enough to prolong fat reserves (USFS 2003b). An apparent change in the winter distribution of mule deer has occurred primarily in Unit 76. During the 1950s and 1960s, deer use of the Soda Front (Wood Canyon south to Montpelier) was extensive, while use of the Bear Lake Plateau (Unit 72) was minimal. Currently, the Bear Lake Plateau and the Soda Hills Area represent the two most significant winter ranges for mule deer in Unit 76 (IDFG 2011b).

Generally, summer and winter areas for mule deer are usually 10 to 20 miles distant, in higher-elevation aspen and conifer communities. Roads fragment habitats and migration corridors and can alter seasonal migrations, which reduces the overall suitability of mule deer habitat (IDFG 2008). The most common destination for mule deer moving through the Study Area and Project Area is the Bear Lake Plateau, the largest winter range in the area (Corey Class and Zach Lockyer, IDFG Wildlife Biologists, Pocatello, Idaho, personal communications). In addition, a small group of mule deer winter in the Crow Creek area northeast to Buck Mountain, northeast of the Project Area (Corey Class, IDFG Wildlife Biologist, Pocatello, Idaho, personal communication). However, the IDFG does not collect or have any specific information on big game migration corridors within or adjacent to the Smoky Canyon Mine area (Jim Mende, IDFG Wildlife Biologist, Pocatello, Idaho, personal communication).

The most recent survey for mule deer populations in the area was conducted in 2006 by IDFG for Management Unit 76, and resulted in a population estimate of 3,363 mule deer (IDFG

2011b). The general buck:doe ratio objective is 15 bucks per 100 does. The current ratio is 12 bucks per 100 does (IDFG 2011b).

Moose

In Idaho, moose prefer shrubby, mixed coniferous and deciduous forests with nearby riparian areas for foraging. In winter, moose rely on hardwood conifer forests for cover (Groves 1997). Moose in southeast Idaho do not concentrate in specific wintering areas, but are widely dispersed in aspen and conifer communities year-round (Kuck 1984). Kuck (1984) found that in the Crow Creek drainage, moose used forest habitat types heavily, with most observations occurring in aspen at elevations between 7,000 and 7,500 feet. Most moose were found using northern and east aspects with slopes of 20 degrees or less (Kuck 1984). The last complete estimate of Unit 76 was 583 plus or minus 146 moose in 1999 (IDFG 2011c). Moose are known to occur in the Project Area.

3.8.4.2 Other Mammals

Bats, fisher, and marten were determined to be additional mammal species of interest based upon previous projects within the CTNF. Marten and fisher are designated as "key" species on CNF winter track routes, and the Project Area provides roosting habitat for bats. The following sections discuss these species.

Bats

Fourteen species of bats are known to occur in Idaho (Perkins and Peterson 1997). The Project Area lack caves and mine adits that could provide permanent roosting habitat; however, both areas provide foraging habitat and roosting habitat for bat species that utilize openings in trees or cliff cracks. Potential roosting and foraging habitat for bats in the Project Area, including rock outcrops, streams, and seeps, are limited.

Surveys conducted for the 2007 FEIS (Maxim 2004g;) documented six species of bats in the area one to three miles north of the Panel G portion of the Project Area, including big brown bat (*Eptesicus fuscus*), little brown bat (*Myotis lucifugus*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), silver-haired bat (*Lasionycteris noctivagans*), and hoary bat (*Lasiurus cinereus*). The most frequently detected of these species (long-eared myotis, long-legged myotis, and silver-haired bat) have habitat requirements associated with forested areas. Roost sites may include tree cavities, snags, or hollow areas under exfoliating bark or in living trees (IMNH 2011).

Fisher

Fishers prefer mature or old-growth coniferous forests (forested riparian habitats in spring, summer, and fall, and younger-aged forests in winter; Groves et al. 1997). Fishers generally avoid areas with little forest cover or significant human disturbance. Fishers are generalized predators that feed on small and medium-sized mammals and birds, and carrion (Reid and Heglen 2008). According to the latest furbearer annual report, no fishers have been accidentally caught (and turned in for a reward) in the southeast region (IDFG Region 7) within the past 20 years (IDFG 2011d).

Marten

American martens are usually found in dense deciduous, mixed, or (especially) coniferous upland and lowland forests. In Idaho, martens were found using a variety of forest types, with the greatest activity in mature spruce-fir. Fifty individuals were transplanted into Franklin Basin (east of Preston, Idaho; 40 miles south of the Project Area) in 1995. According to the latest annual furbearer report for Caribou County, no martens were harvested (IDFG 2011d); therefore, there is no indication of the presence of marten in the Study Area and this species will not be discussed in **Chapter 4**.

3.8.5 Amphibians and Reptiles

Amphibians may occur in any aquatic or riparian habitat. The greatest number of amphibians would most likely be found in slow water near streams, lakes, or stream and lake margins, including within and around riparian areas, floodplains, and wet meadows.

Reptiles are cold-blooded vertebrates, and generally are most abundant in warm, dry habitats. Reptiles are characterized by having dry skin with keratinized epidermal scales, true claws (if limbs are present), and if they lay eggs, the eggs are amniotic and have a shell that allows them to develop with little water (Cossel 1997).

Reptiles and amphibians are present year-round in the Study Area, although they are not visible in the winter, but suitable habitat for amphibians specifically within the Project Area is extremely limited. The 2003 SFEIS (four to ten miles north of the Study Area) included an in-depth analysis of amphibian and reptile occurrence, distribution, and relative abundance (Shive et al. 2000). In the Smoky Canyon Mine area, two species of amphibians and two species of reptiles were found: tiger salamander (*Ambystoma tigrinum*), boreal chorus frog (*Pseudacris maculata*), rubber boa (*Charina bottae*), and western terrestrial garter snake (*Thamnophis elegans*) (Shive et al 2000). Maxim (2004h) found tiger salamander (*Ambystoma tigrinum*), boreal chorus frog (*Pseudacris maculata*), and western toad (*Bufo boreas*) in their surveys for Panels F and G (but all observations were located outside of the Project Area).

3.9 FISHERIES AND AQUATICS

3.9.1 2007 FEIS Affected Environment

Fisheries and aquatic resources were thoroughly addressed in Section 3.8 of the 2007 FEIS, titled Fisheries and Aquatics (pages 3-138 through 3-161). There are no fish-bearing streams within the Project Area. However, as described in the 2007 FEIS, Yellowstone cutthroat trout (YCT; *Oncorhynchus clarki bouvieri*), is a USFS-Sensitive species known to occur within Deer Creek and Crow Creek, which are located less than one mile and less than two miles, respectively, from the Panel G Lease Modification area. Some small tributary streams that YCT utilize for spawning are not perennial. In intermittent or ephemeral drainages, spawning can take place during spring runoff or other times when waters are high. Newly hatched fry frequently move to perennial waters just before the natal stream goes dry (Trotter 1987). In northeastern Nevada, Nelson et al. (1987) observed Lahontan cutthroat trout (*O. c. henshawi*) utilizing ephemeral streams to spawn during four years of abnormally high flows, which the authors suggested was a reproductive behavioral plasticity in response to environmental uncertainty and unfavorable conditions such as flooding (Nelson et al. 1987). The use of intermittent streams for spawning by YCT is poorly documented, but has been noted in some intermittent tributaries to Yellowstone

Lake (Trotter 1987). The use of intermittent streams by fish in the area of Panels F and G has not been documented, although intermittent drainage channels in the Project Area could potentially deliver important nutrients, organic matter, or invertebrates to perennial streams (Wipfli and Gregovich 2002, Price et al. 2003, Cummins and Wilzbach 2005). **Section 3.4.1.1** describes surface water resources within the Project Area in order to assess the potential for sedimentation impacts from this Project to the nearby fish-bearing streams as presented in **Section 4.4**.

Prescription 2.8.3 in the RFP applies within defined AIZs, the delineation of which depends upon water source type (perennial, intermittent, wetland, etc.). The AIZ for non-fish bearing, permanently flowing streams is defined in the RFP as the stream itself and whichever of the following parameters is greatest:

- Either side of the stream extending from the edges of the active stream channel to the top of the inner gorge;
- Outer edges of the 100-year floodplain;
- Outer edges of riparian vegetation;
- A distance equal to the height of one site-potential tree; or
- 150 feet slope distance (300 feet, including both sides of the stream channel)

Default AIZ widths for wetlands include: 1) for wetlands greater than 1 acre, the AIZ would consist of an area 150 feet slope distance from the maximum pool elevation of the wetland, and 2) for wetlands less than 1 acre, the AIZ would consist of an area 50 feet slope distance from the edges of the wetland.

AIZs are areas encompassing the aquatic and riparian ecosystems and adjacent lands that directly affect the natural processes controlling health and function of the aquatic and riparian ecosystems. Generally, standards and guidelines associated with AIZs focus on avoidance. AIZs in and near the Project Area are shown on **Figures 3.7-1**, **3.7-2**, and **3.9-1**.

3.10 GRAZING MANAGEMENT

3.10.1 2007 FEIS Affected Environment

This section is tiered to Section 3.9 of the 2007 FEIS, titled Grazing Management (pages 3-161 through 3-165), and applicable information is hereby incorporated by reference. No new baseline information was collected or deemed necessary for this Project. The following summary of the referenced information is specific to the Project.

An animal unit month (AUM) represents the amount of dry forage required to maintain one animal unit (usually a 1000-pound cow or calf, in terms of cattle) for one month, based on a forage allowance of 26 pounds per day (USFS 2003b). Each permittee is allowed a certain number of AUMs within their allotment; actual use is typically less than permitted (USFS 2003b).

Figures 3.10-1, **3.10-2**, and **3.10-3** show the allotment boundaries and range improvements in the Project Area. The two range allotments (or portions of allotments) on CNF lands in the Panel F portion of the Project Area are the Manning Creek and Sage Creek allotments. The two range allotments (or portions of allotments) on CNF lands in the Panel G portion of the Project Area are the Deer Creek and Wells Canyon allotments. There are no range improvements in the

Project Area. **Table 3.10-1** provides allotment information on suitable acreage and stocking rates.

Table 3.10-1 Range Allotment Information for the Project Area

ALLOTMENT	SUITABLE ACRES		STOCKING RATE (AUMS)	
	FOR CATTLE	FOR SHEEP	CATTLE (COW/CALF MONTHS)	SHEEP (SHEEP MONTHS)
Sage Valley C&H	1,228	1,521	507	3,964
Manning Creek S&G (currently being temporarily managed as one unit with Wells Canyon)	2,658	4,091	706	7,650
Deer Creek S&G	1,448	2,496	329	5,106
Wells Canyon S&G	1,631	2,281	661	3,160

C&H - Cattle and Horses
S&G - Sheep and Goats

3.11 RECREATION AND LAND USE

3.11.1 2007 FEIS Affected Environment

This section is tiered to Section 3.10 of the 2007 FEIS, titled Recreation and Land Use (pages 3-165 through 3-179), and applicable information is hereby incorporated by reference. No new baseline information was collected or deemed necessary for this Project. The following summary of the referenced information is specific to the Project.

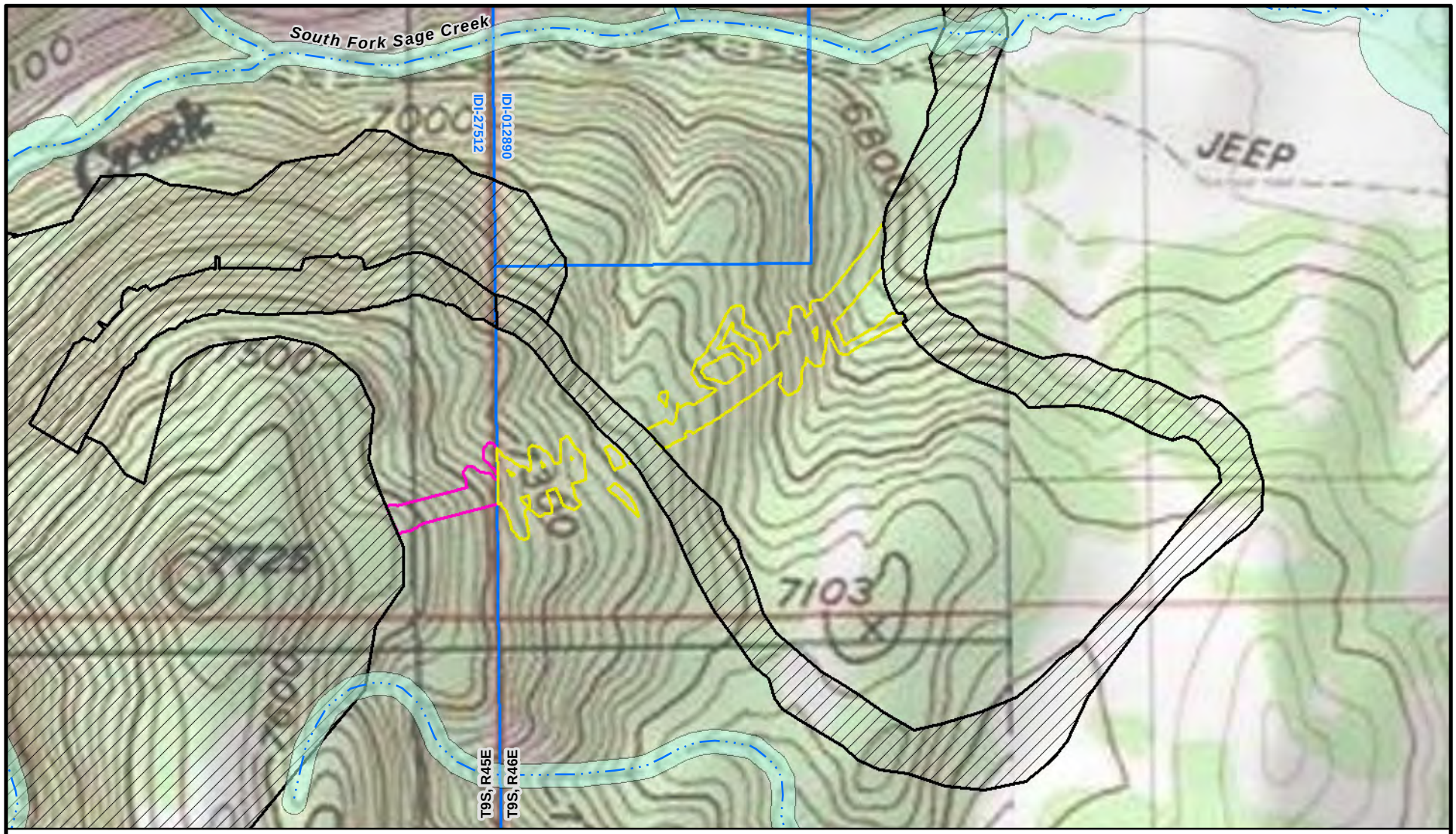
3.11.1.1 Recreation

Recreation Opportunity Spectrum

In order to inventory and manage recreation areas and activities, the CNF uses a planning tool called the Recreation Opportunity Spectrum (ROS), which categorizes recreation settings by the amount of development and other attributes. ROS categories include: Primitive, Semi-Primitive Non-motorized, Semi-Primitive Motorized, Roaded Modified, Roaded Natural, and Urban. Recreation use is allocated using the ROS classes, which help visitors find the setting that best provides for their desired experience.

The two ROS categories in the Project Area are Semi-primitive Motorized (SPM) and Roaded Modified (RM). The Panel F portion of the Project Area is designated ROS Class SPM. The ROS categories within the Panel G portion of the Project Area are shown on **Figure 3.11-1**. The setting for SPM lands includes a moderate probability of: solitude, closeness to nature, a high degree of challenge and risk using motorized equipment, predominantly natural-appearing environment, few users but evidence shows on trails, and few vegetation alterations that are widely dispersed and visually subordinate. Semi-primitive Motorized areas range from 2,500 to 5,000 acres that are screened by vegetation or topography, creating a "buffer" from surrounding development. The majority of lands in the Project Area are designated as SPM. The RFP Guidelines suggest project planning that meets the ROS per the CNF ROS map.

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.9-1 Aquatic Influence Zones - Panel F Conveyor System Area.mxd



Explanation

- Approved Panel F and Haul Road Disturbance
- Existing Leases
- Proposed Disturbance Off Lease
- Proposed Disturbance on Lease IDI-27512

Aquatic Resources

- Intermittent Stream
- Aquatic Influence Zone

N

600 0 600 Feet

Figure 3.9-1
Aquatic Influence Zones
Panel F Conveyor System Area
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.10-1 Grazing Allotments - Panel F Conveyor System Area.mxd

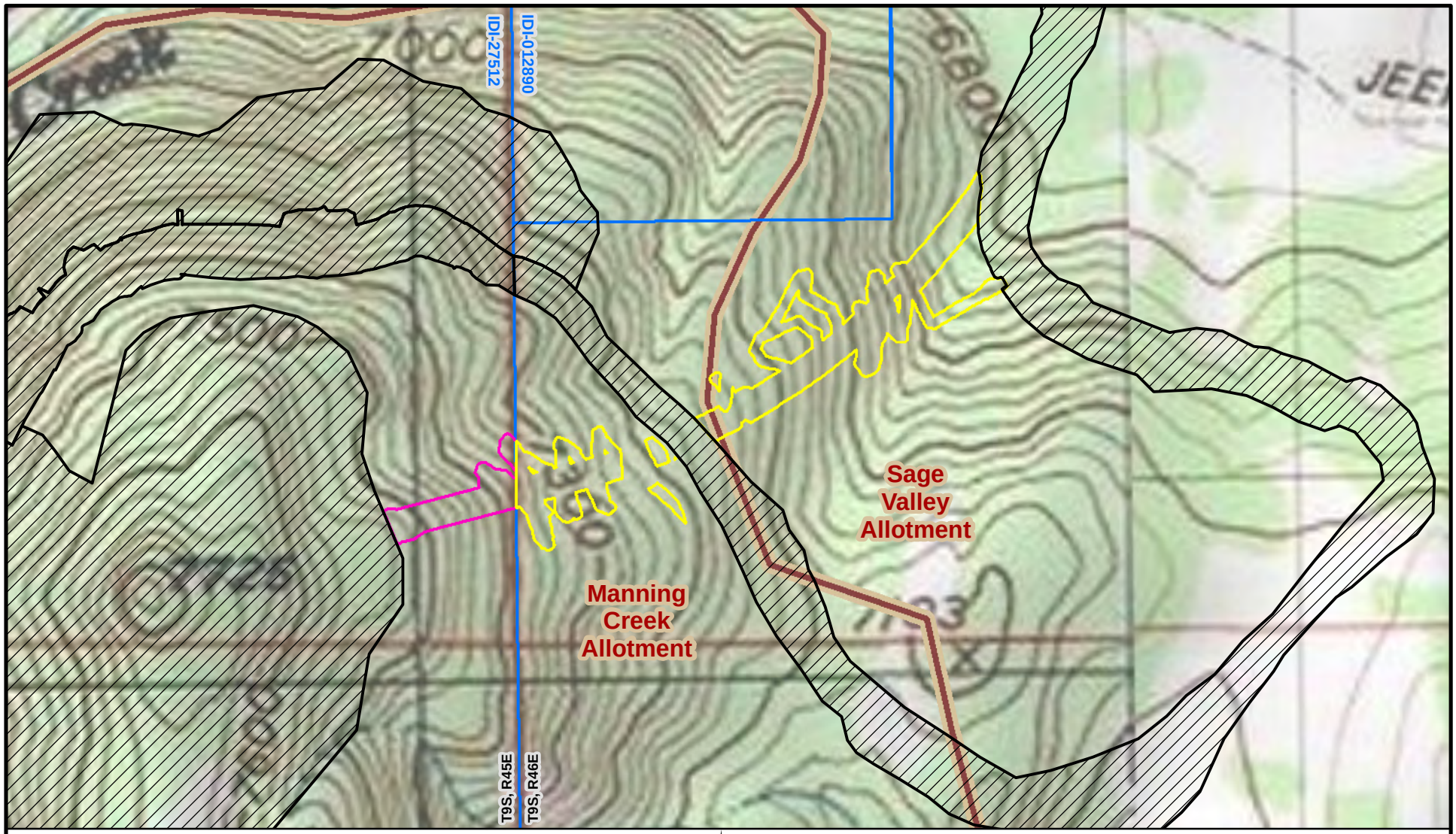


Figure 3.10-1
Grazing Allotments
Panel F Conveyor System Area
Panel F & G Lease/Mine Plan Modifications EIS

T9S, R45E

T10S, R45E

Green Mountain Allotment

Deer Creek Allotment

Wells Canyon Allotment

Lease IDI-01441

Wells Canyon Allotment

Alleman Allotment

Wells Canyon

Proposed Lease Modification

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Grazing

- Range Allotment Boundary

N

800 0 800 Feet

Figure 3.10-2
Grazing Allotments
Panel G Lease Modification Area:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\ProjectMXDs\Figures\Chapter 3\Figure 3.10-2 Grazing Allotments - Panel G Lease Modification Area Proposed Action Alternative 1.mxd

T9S, R45E

T10S, R45E

Green Mountain Allotment

Deer Creek Allotment

Wells Canyon Allotment

Lease IDI-01441

Wells Canyon Allotment

Alleman Allotment

Wells Canyon

Proposed Lease Modification

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Grazing

- Range Allotment Boundary

N

800 0 800 Feet

Figure 3.10-3
Grazing Allotments
Panel G Lease Modification Area: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\Project\MXDs\Figures\Chapter 3\Figure 3.10-3 Grazing Allotments - Panel G Lease Modification Area Alternative 2.mxd

The setting for RM lands includes the opportunity to be with others in developed sites, little challenge or risk, relatively natural appearing environment as viewed from roads and trails, moderate evidence of human activity; access and travel by standardized motor vehicles, and resource modification and utilization is evident but generally harmonizes with the natural environment. The RM corridor occurs in the Panel G portion of the Project Area, in the western half of Lease IDI-01441.

Developed and Dispersed Recreation

There are no developed recreation amenities such as campgrounds or guard stations within the Project Area.

The dominant type of dispersed recreation in the general vicinity of the Smoky Canyon Mine is big game hunting for elk, moose, and deer. Other dispersed recreation activities occurring in the area include snowmobiling, cross-country skiing, horseback riding, upland bird hunting, camping, picnicking, driving for pleasure/sight-seeing, and off-road vehicle use.

There are no developed recreation amenities or trails in the Panel G portion of the Project Area (**Figure 3.11-1** and **Figure 3.11-2**). The closest trail is the Deer Creek Trail (593), located less than 0.25-mile north of the Panel G portion of the Project Area. That trail is approximately five miles long, extending from Diamond Creek Road (FR 1102) to Crow Creek Road (FR 111) (USFS 2002). This trail is not open to vehicles 50 inches or less in width (USFS 2013a).

The portion of the Project Area that would contain the Panel F ore conveyor system is mostly within existing phosphate leases and SUAs where there are no developed recreation amenities and no trails. The portion of the route outside the lease area and SUAs falls between an existing haul road and a lease area, and does not contain recreation amenities.

3.11.1.2 Land Use

Land Status/Ownership

All lands in the Project Area are federal lands managed by the CTNF.

Management Prescriptions

The RFP contains management prescriptions that are designed to meet the desired future conditions of the CNF.

Management prescriptions are a set of practices applied to a specific area to attain multiple-use and provide a basis for consistently displaying management direction on land administered by the CNF. Prescriptions identify the emphasis or focus of management activities for an area, but do not necessarily construe exclusive use. Management prescriptions do not stand alone, but are part of the management direction package for the CNF that also includes forest-wide goals, objectives, standards, and guidelines. Where a management prescription allows an activity, such as recreation or livestock grazing, the standards and guidelines provide specific parameters within which the activity must be managed. In areas where prescriptions are applied, such direction would overrule CNF-wide direction only if the prescription conflicts with the CNF-wide standards and guidelines (USFS 2003a).

Management prescriptions in the Project Area are shown on **Figures 3.11-3** and **3.11-4**, and include:

Prescription 5.2 – CNF Vegetation Management. Emphasis of this prescription is on scheduled wood-fiber production, timber growth, and yield, while maintaining or restoring forested ecosystem processes and functions to more closely resemble historical ranges of variability with consideration for long-term CNF resilience. Motorized use is prevalent for timber management activities and recreation. This prescription applies to an area including the Panel F portion of the Project Area (**Figure 3.11-3**).

Prescription 6.2 – Rangeland Vegetation Management. This prescription focuses on maintaining and restoring rangeland ecosystem processes and functions to achieve sustainable resource conditions. Activities in these areas are designed to achieve restoration of non-forested vegetation to the historic range of variability and include watershed restoration, thinning, prescribed fire, wildfire for resource benefit, and noxious weed treatments. Dispersed recreation activities occur throughout these areas. Motorized transportation is common, but some seasonal restrictions may occur. This prescription applies to the Panel G portion of the Project Area (**Figures 3.11-4** and **3.11-5**).

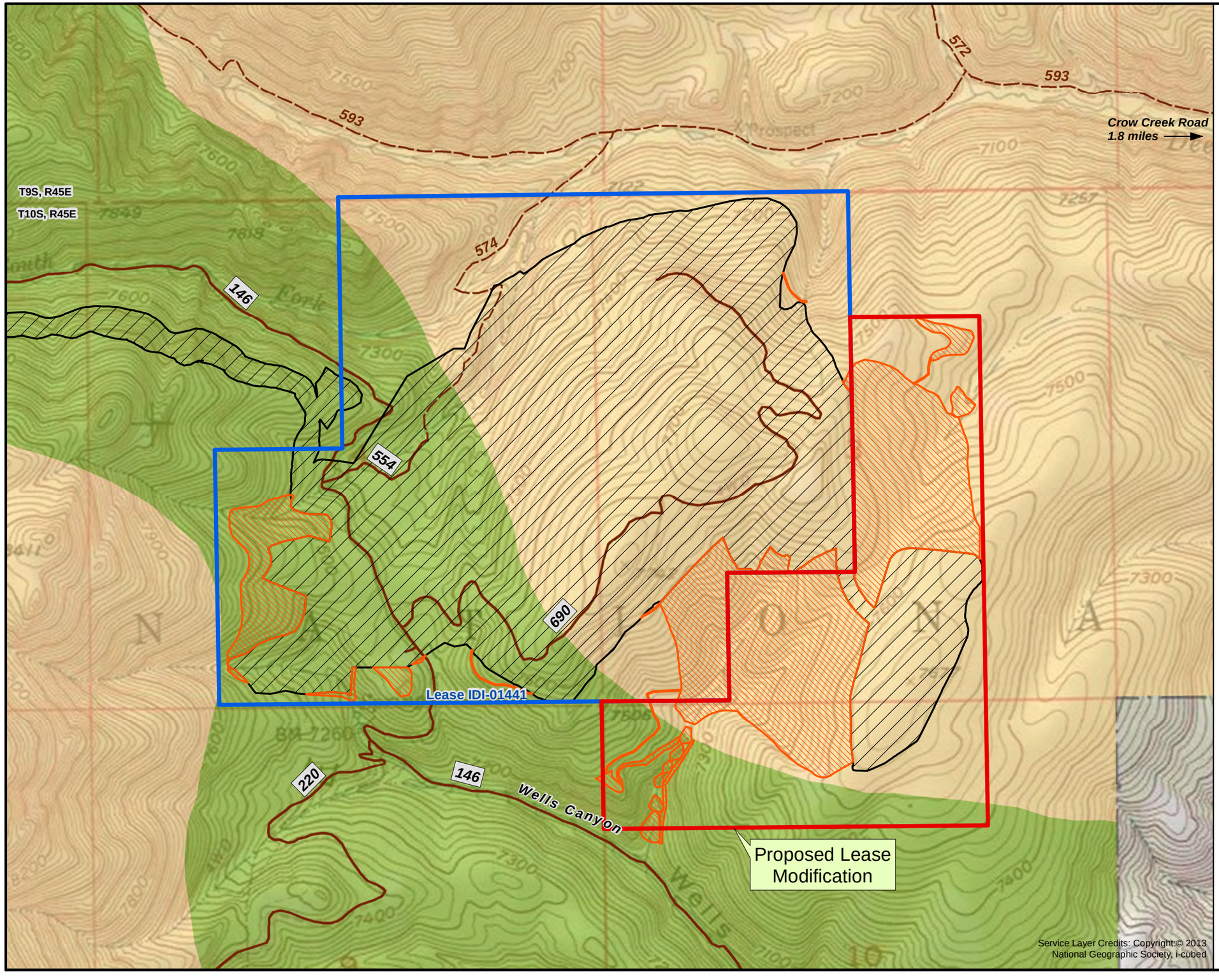
Prescription 8.2.2 – Phosphate Mine Areas. These areas are federal phosphate lease areas where mining, post-mining reclamation, or exploration is taking place. This prescription realizes the dynamic process involving research and technology that affects the BMPs that are implemented for mining operations. This prescription applies to both the Panels F and G portions of the Project Area (**Figures 3.11-3**, **3.11-4**, and **3.11-5**).

Special Use Authorizations

There are two existing SUAs in the Project Area that would be affected by the Project (**Figure 2.4-1**): One general SUA for mining-related disturbances associated with Smoky Canyon Mine; and the other encompasses the Panel F haul road. Both SUAs are issued Simplot for disturbances associated with mining on existing leases at the Smoky Canyon Mine.

Timber Management

Tentatively Suitable Forest land is land which is producing or is capable of producing crops of industrial wood and: 1) has not been withdrawn by Congress, the Secretary, or Chief; 2) existing technology and knowledge is available to ensure timber production without irreversible damage to soil, productivity, or watershed conditions; and 3) existing technology and knowledge provides reasonable assurance that adequate restocking can be attained within five years after final harvesting (USFS 2003a). These lands represent the maximum acres that could be managed for regular predictable timber outputs and are used in determining the Allowable Sale Quantity (ASQ) (USFS 2003b). ASQ is the amount of timber that may be sold from the area of suitable land covered by the CNF RFP for a time period specified by the RFP. This quantity is normally expressed as the "average annual allowable sale quantity" (USFS 2003b). Other forested areas can be cut under the RFP for different management reasons, regardless of whether or not the ASQ is met for a specific year.



Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Recreation

- Forest Service Road
- Forest Service Trail - nonmotorized
- 146 Forest Service Road Number
- 404 Forest Service Trail Number

Recreation Opportunity Spectrum

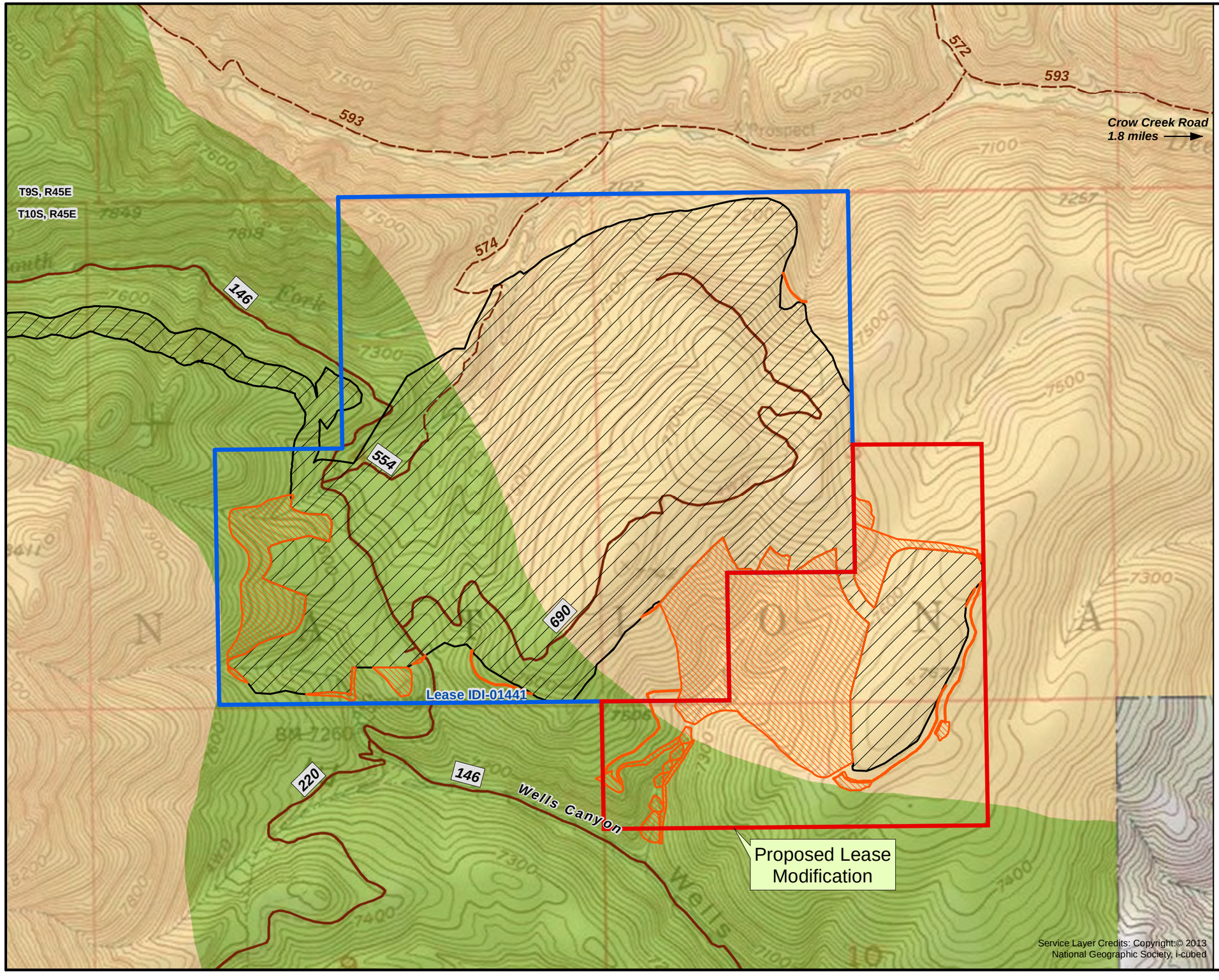
- Roaded Modified
- Semi-primitive Motorized

N

1,000 0 1,000 Feet

Figure 3.11-1
USFS Routes and Recreation
Panel G Lease Modification Area:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.11-1 USFS Routes and Recreation - Panel G Lease Modification Area Proposed Action Alternative 1.mxd



Explanation

- Proposed Lease Modification
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Recreation

- Forest Service Road
- Forest Service Trail - nonmotorized
- 146 Forest Service Road Number
- 404 Forest Service Trail Number

Recreation Opportunity Spectrum

- Roaded Modified
- Semi-primitive Motorized

N

1,000 0 1,000
Feet

Figure 3.11-2
USFS Routes and Recreation
Panel G Lease Modification Area: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.11-2 USFS Routes and Recreation - Panel G Lease Modification Area Alternative 2.mxd

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.11-3 Management Prescriptions SuitableTimber - Panel F Conveyor System.mxd

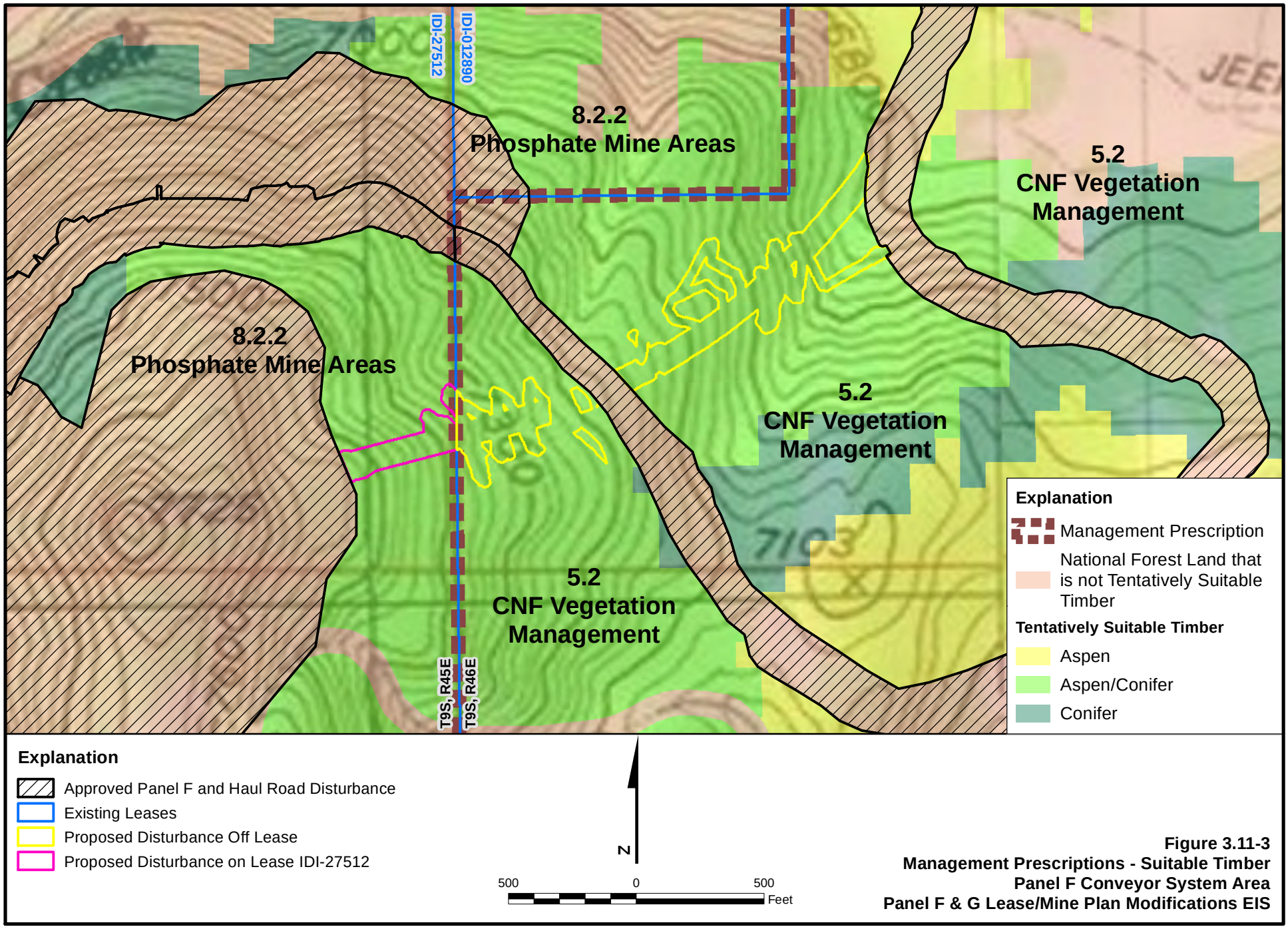


Figure 3.11-3
Management Prescriptions - Suitable Timber
Panel F Conveyor System Area
Panel F & G Lease/Mine Plan Modifications EIS

T9S, R45E

T10S, R45E

6.2
Rangeland Vegetation
Management

8.2.2
Phosphate Mine Areas

6.2
Rangeland Vegetation
Management

6.2
Rangeland Vegetation
Management

6.2
Rangeland Vegetation
Management

Lease IDI-01441

Wells Canyon

Proposed Lease
Modification

Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance
- Management Prescription
- National Forest Land that is not Tentatively Suitable Timber

Tentatively Suitable Timber

- Aspen
- Aspen/Conifer
- Conifer

N

800 0 800
Feet

Figure 3.11-4
Management Prescriptions - Suitable Timber
Panel G Lease Modification Area:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

T9S, R45E

T10S, R45E

6.2
Rangeland Vegetation
Management

8.2.2
Phosphate Mine Areas

6.2
Rangeland Vegetation
Management

6.2
Rangeland Vegetation
Management

Lease IDI-01441

6.2
Rangeland Vegetation
Management

Wells Canyon

Proposed Lease
Modification

Service Layer Credits: Copyright:© 2013
National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification Area
- Existing Panel G Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance
- Management Prescription
- National Forest Land that is not Tentatively Suitable Timber

Tentatively Suitable Timber

- Aspen
- Aspen/Conifer
- Conifer

N

800 0 800
Feet

Figure 3.11-5
Management Prescriptions - Suitable Timber
Panel G Lease Modification Area: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\ProjectMXDs\Figures\Chapter 3\Figure 3.11-5 Management Prescriptions SuitableTimber - Panel G Lease Modification Area Alternative 2.mxd

Management Prescription 5.2 (USFS 2003a, Forest Vegetation Management) pertains to scheduled wood-fiber production, timber growth, and yield while maintaining or restoring forested ecosystem processes and functions to more closely resemble historical ranges of variability with consideration for long-term forest resilience. All forms of timber harvest are permitted, including salvage, to achieve stated goals and objectives. Livestock grazing may be allowed on transitory forage produced following timber harvest where and when that use would not conflict with regeneration and restoration efforts. Motorized use is prevalent for timber management activities and recreation. Land in this prescription is included in the suitable timber base and contributes to the ASQ.

Under the RFP (USFS 2003a), Management Prescription 5.2 – CNF Vegetation Management is the only prescription where suitable timber is included in the ASQ. While the portion of the Project Area located at Panel G contains suitable timber, it is designated Management Prescription 6.2; these lands are removed from the suitable timber base and do not contribute to the ASQ. Timbered land in all other prescriptions within the Project Area has been removed from the suitable timber base and does not contribute to the ASQ on the CNF. Management Prescription 5.2 is replaced by Prescription 8.2.2 (Phosphate Mine Areas) following approval of a M&RP. Prescription 8.2.2 allows for the exploration and development of existing mine leases.

The Project Area contains 273.8 acres of tentatively suitable timber (142.8 acres of aspen, 18.7 acres of aspen/conifer, and 112.3 acres of conifer; **Figures 3.11-3**, **3.11-4**, and **3.11-5**). However, only the portion of the Project Area adjacent to Panel F that lies within Prescription 5.2 is included in the ASQ. This portion of the Project Area contains 6.8 acres of tentatively suitable aspen/conifer timber, which is included in the ASQ.

3.12 INVENTORIED ROADLESS AREAS

3.12.1 2007 FEIS Affected Environment

This section is tiered to Section 3.11 of the 2007 FEIS, titled Inventoried Roadless Areas/Recommended Wilderness and Research Natural Areas (pages 3-179 through 3-186), and applicable information is hereby incorporated by reference. The following information summarizes changes in the rules governing roadless areas that occurred subsequent to the 2007 FEIS, and provides relevant information about potentially affected roadless areas specific to the Project.

3.12.2 2001 Roadless Area Conservation Rule

The USFS identified IRAs nationwide as part of its 1972–1985 Roadless Area Review and Evaluation process. All the IRAs in the nation were reviewed again by the USFS in 1999 under the Roadless Area Conservation Initiative. In November 2000, the USFS issued the Final EIS for the proposed Roadless Area Conservation Rule. The final Roadless Area Conservation Rule was published in the Federal Register on January 21, 2001 (66 FR 3244).

The USFS Roadless Area Conservation Rule was issued to govern USFS actions in all IRAs. The Roadless Area Conservation Rule prohibits a USFS responsible official from approving road construction and reconstruction and the cutting, sale, or removal of timber in IRAs except when the responsible official determines certain circumstances apply (36 CFR 294).

Several groups and states filed lawsuits challenging the 2001 Roadless Area Conservation Rule. The Idaho Federal District Court issued a preliminary injunction on May 10, 2001, prohibiting the USFS from implementing the rule. On December 12, 2002, the Ninth Circuit Court of Appeals reversed and remanded the Idaho District Court's injunction. The Ninth Circuit Court issued its mandate to the Idaho District Court to remove its preliminary injunction on April 4, 2003, thereby putting the Roadless Area Conservation Rule back into effect. However, on July 14, 2003, the U.S. District Court for the District of Wyoming found the Roadless Area Conservation Rule to be unlawful and ordered the rule be permanently enjoined.

On July 12, 2004, Ann M. Veneman, former Secretary of Agriculture, announced a proposal to establish a state petitioning process for IRA management. The proposed rule was published on July 16, 2004. On May 13, 2005, the USFS issued a Final State Petition Rule, which replaced the enjoined 2001 Roadless Area Conservation Rule. This 2005 rule established a process for governors with National Forest System IRAs in their state to petition the Secretary of Agriculture to establish or adjust management requirements for these areas. Unless governors chose to initiate a change through the petition process, existing IRA management requirements contained in individual land and resource management plans would remain unchanged.

On September 20, 2006, the U.S. District Court for the Northern District of California set aside the 2005 State Petitions Rule and reinstated the 2001 Roadless Area Conservation Rule nationwide, except in the Tongass National Forest. In addition, on November 29, 2006, the Court issued an injunction halting all activities inconsistent with the 2001 Roadless Area Conservation Rule. In the injunction, the Court stated that the 2001 rule had been repealed illegally and therefore all projects in roadless areas inconsistent with that rule were also illegal and must be halted.

As of August 12, 2008, the Federal District Court for the District of Wyoming, permanently enjoined the 2001 Roadless Area Conservation Rule (USFS 2011).

3.12.3 Inventoried Roadless Areas in Idaho

Idaho Governor James Risch presented a petition for rulemaking under section 553(e) of the Administrative Procedures Act on behalf of the State of Idaho on November 29 and 30, 2006. The Proposed Idaho Roadless Rule designated a system of lands titled Idaho Roadless Areas. In August 2008, the Roadless Area Conservation, National Forest Lands in Idaho Final Environmental Impact Statement (Roadless Area Conservation Rule [RACR]; USFS 2008) was issued, and the Final Rule and Record of Decision on Idaho Roadless Area Conservation were published in the Federal Register on October 16, 2008. However, a complaint was filed in federal district court in Idaho in January 2009 requesting the Court enjoin this 2008 rule and reinstate the 2001 Roadless Rule. Both the Federal District Court for Idaho and the Ninth Circuit Court of Appeals (2013) have upheld the Idaho Roadless Rule.

The State of Idaho has entered into a Memorandum of Understanding (MOU) with the USFS National Forests in Idaho to provide an agreement to cooperate on activities subject to the Idaho Roadless Rule (USFS 2009).

The USFS issued Interim Directive No. 1920-2009-1 on July 14, 2009, clarifying the direction regarding Delegation of Authority pursuant to 36 CFR 294 – Special Areas, Subpart C – The Idaho Roadless Rule. The Interim Directive states that the Regional Forester will review project

proposals in Idaho Roadless Areas to ensure consistency in applying the specific exceptions or conditioned permissions and decision-making within the context of the Idaho Roadless Rule.

The Idaho Roadless Rule recommends Idaho Roadless Areas be managed within a spectrum of five management themes: Wild Land Recreation; Primitive; Special Areas of Historic and Tribal Significance; Backcountry/Restoration; and General Forest, Rangeland and Grassland (USFS 2008).

3.12.4 Existing Conditions in the Project Area

As displayed on **Figures 2.4-1**, **3.12-1**, and **3.12-2**, portions of the Project lie within both the SCRA, which encompasses approximately 12,710 acres; and the Meade Peak Roadless Area (MPRA), which encompasses approximately 44,585 acres (USFS 2003b). Approximately 48 acres of the Project Area comprised of the East ODA expansion area would be within the SCRA. Approximately 19.4 acres of the proposed South ODA expansion within the existing lease would be within the MPRA. These IRAs do not contain recommended wilderness under the RFP. The portions of the IRAs in the Project Area are designated General Forest.

The areas under this theme provide a variety of goods and services as well as a broad range of recreational opportunities, and conservation of natural resources (USFS 2008). Within the theme, for mineral leases, contracts, permits, and other associated activities authorized after October 16, 2008, road construction or reconstruction is authorized in association with phosphate deposits (USFS 2008).

3.13 VISUAL AND AESTHETIC RESOURCES

3.13.1 2007 FEIS Affected Environment

This section is tiered to Section 3.12 of the 2007 FEIS, titled Visual and Aesthetic Resources (pages 3-186 through 3-199), and applicable information is hereby incorporated by reference. No new baseline information was collected or deemed necessary for this Project. The following summary of the referenced information is specific to the Project.

3.13.1.1 Visual Resource Management (Scenery Management)

The majority of lands within the Project Area where new disturbance would occur are classified as Partial Retention and Modification (see **Figures 3.13-1** and **3.13-2**). According to the RFP (USFS 2003a), the scenic environment of the CNF will be maintained through adherence to existing VQOs, with the exception of phosphate mining. Phosphate mining activities and reclamation may or may not meet the given VQO (USFS 2003b). In the case where the VQO is not met, the M&RP would mitigate visual changes to the degree that reclamation methods and economics allow.

Scenic integrity indicates the current status of a landscape. It is determined on the basis of visual changes that detract from the scenic quality of the area (USDA 1996). The Scenic Integrity Objective (SIO) refers to the degree of acceptable change or alteration of the valued landscape theme. Under the Scenery Management System (SMS), higher SIOs represent highly valued natural landscapes where management activities would result in little or no deviation from those values. Greater modification to the landscape is acceptable in low SIO landscapes.

High Scenic Integrity applies to an area that appears unaltered and where the valued landscape character appears intact. Moderate Scenic Integrity may appear slightly altered, but alterations are visually subordinate to the overall landscape. In Low Scenic Integrity areas, deviations may begin to dominate the landscape view. The Project Area landscape in Partial Retention areas has moderate scenic integrity; in Modification areas, low scenic integrity would apply.

3.13.1.2 Viewers and Views in the Project Area

The 2007 FEIS (Section 3.12.4) identified seven potential viewpoints of the Smoky Canyon Mine, and provided photos of the affected area from those viewpoints, as well as viewshed maps. Analysis contained in the project record for this EIS determined that the Project would only be visible from two viewpoints, identified on **Figures 3.13-1** and **3.13-2**. The viewshed analysis from these points is contained in **Section 4.13** of this EIS.

3.14 CULTURAL RESOURCES

3.14.1 2007 FEIS Affected Environment

This section is tiered to Section 3.13 of the 2007 FEIS, titled Cultural Resources (pages 3-200 through 3-208), and relevant information is hereby incorporated by reference. The following is a summary of the referenced information, as well as new information specific to the Project.

3.14.1.1 Previous Research

Table 3.14-1 presents the 36 previous cultural resource inventories in and around the current Project Area. Five of these projects were specific to the 2007 FEIS (Penner and Crosland 2001; Statham 2003; Gray et al. 2003; Gray and Statham 2004; and Gray and Statham 2005). An additional three projects were specific to this Project (Rasmussen and Polk 2012a; Rasmussen and Polk 2012b; and Rasmussen and Polk 2013). One project (Polk and Pagano 2013) was an evaluation of previously recorded arborglyph sites along the Panel G Haul Road; this evaluation was necessary prior to construction of that road as a condition of approval. The recent Class III cultural resource inventories for the Project were conducted to encompass each component of the proposed mine modification (i.e., Panel G ODAs, Panel F ore conveyor system, and stormwater control features) in order to identify any sites. Cultural resource inventory reports are on file at the associated agency office (i.e., USFS, BLM) and the SHPO. Site location information is considered sensitive; therefore, these reports are for limited circulation and not available to the general public.

Sage Creek Roadless Area
Back Country Restoration

Sage Creek Roadless Area
General Forest

Meade Peak
Roadless Area
General Forest

T9S, R45E

T10S, R45E

Lease IDI-01441

Wells Canyon

Proposed Lease
Modification

Service Layer Credits: Copyright:© 2013
National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification Area
- Existing Panel G Simplot Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Inventoried Roadless Areas

- Sage Creek Roadless Area
- Meade Peak Roadless Area

N

800 0 800
Feet

Figure 3.12-1
Sage Creek and Meade Peak
Inventoried Roadless Areas
Panel G Lease Modification Area:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\Project\MXDs\Figures\Chapter 3\Figure 3.12-1 Inventoried Roadless Areas of Sage Creek and Meade Peak - Panel G Lease Modification Area Proposed Action Alternative 1.mxd

Sage Creek Roadless Area
Back Country Restoration

Sage Creek Roadless Area
General Forest

Meade Peak
Roadless Area
General Forest

T9S, R45E

T10S, R45E

Lease IDI-01441

Wells Canyon

Proposed Lease
Modification

Service Layer Credits: Copyright:© 2013
National Geographic Society, i-cubed

Explanation

- Proposed Lease Modification Area
- Existing Panel G Simplot Lease
- Approved Panel G and Haul Road Disturbance
- Proposed ODA Expansions and Stormwater Features Disturbance

Inventoried Roadless Areas

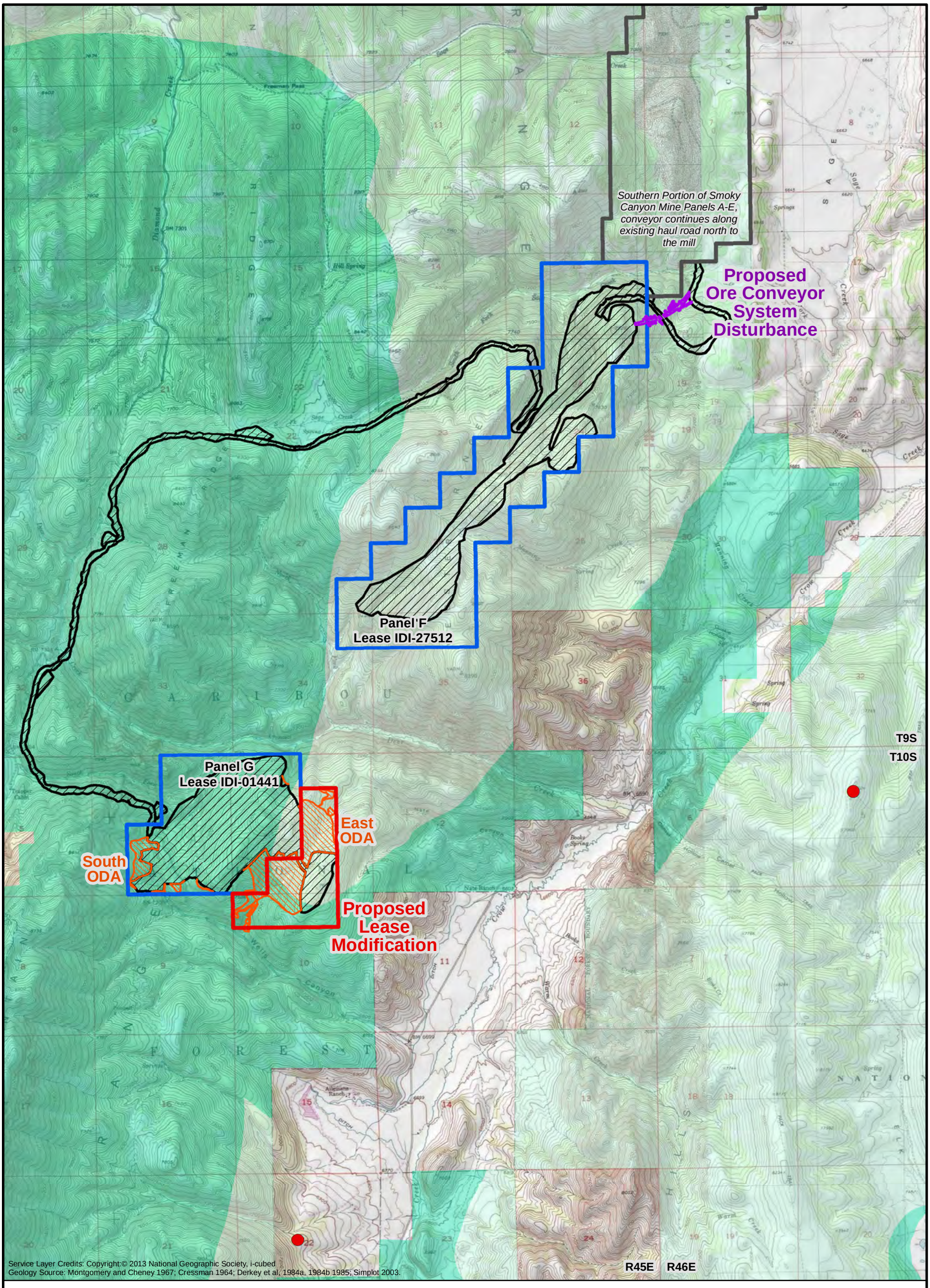
- Sage Creek Roadless Area
- Meade Peak Roadless Area

N

800 0 800
Feet

Figure 3.12-2
Sage Creek and Meade Peak
Inventoried Roadless Areas
Panel G Lease Modification Area: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\IDIClients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyor\Project\MXDs\Figures\Chapter 3\Figure 3.12-2 Inventoried Roadless Areas of Sage Creek and Meade Peak - Panel G Lease Modification Area Alternative 2.mxd



Explanation

- Proposed Conveyor System Disturbance
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panels F and G Disturbance
- Panels F & G Lease Boundaries
- Smoky Canyon Mine
- Observation Point

Visual Quality Objectives

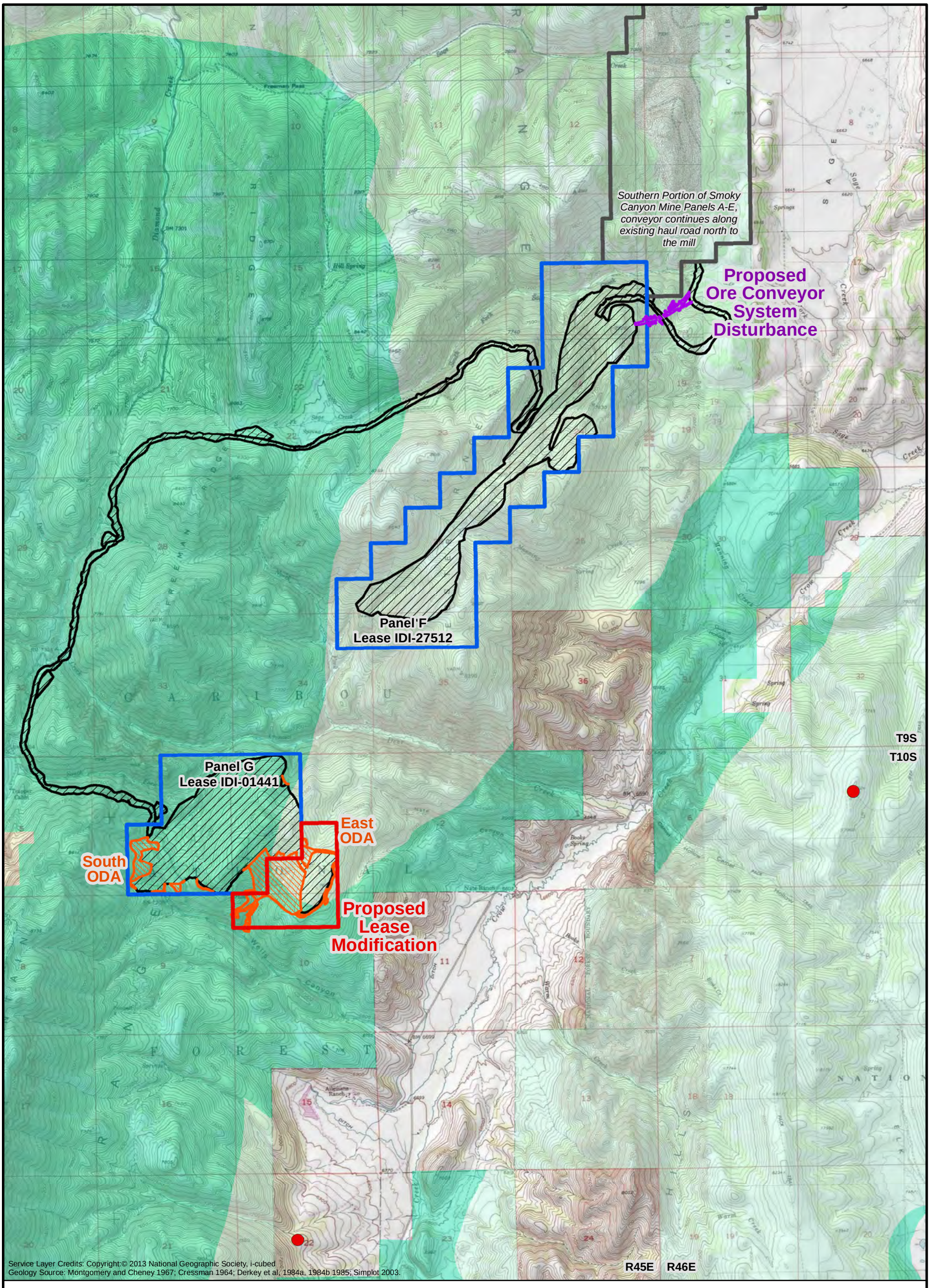
- Modification
- Partial Retention

N

3,500 0 3,500 Feet

Figure 3.13-1
Visual Quality Objectives and View Points:
Proposed Action/Alternative 1
Panel F & G Lease/Mine Plan Modifications EIS

Document Path: X:\ID\Clients\JR_Simplot\PanenG_LeaseMod_ExpansionConveyorProject\MXDs\Figures\Chapter 3\Figure 3.13-2 Visual Quality Objectives and View Points Alternative 2.mxd



Explanation

- Proposed Conveyor System
- Proposed Lease Modification
- Proposed ODA Expansions and Stormwater Features Disturbance
- Approved Panels F and G
- Panels F & G Lease Boundaries
- Smoky Canyon Mine
- Observation Point

Visual Quality Objectives

- Modification
- Partial Retention

N

3,500 0 3,500 Feet

Figure 3.13-2
Visual Quality Objectives and View Points: Alternative 2
Panel F & G Lease/Mine Plan Modifications EIS

Table 3.14-1 Previous Cultural Resource Inventories in the Project Area

PROJECT DESCRIPTION	AUTHOR	YEAR
Archeological Investigations in the Smoky Canyon Area	Druss, Mark, Max Dahlstrom, Claudia Druss, and Steve Wright (Idaho State University (ISU))	1980
Stage I Investigation and Analysis of Archaeological Resources in Pit Area, Mill Sites, and Fill Site, Smoky Canyon Lease I-012890 (CRM-CB-61)	Druss, Mark, Max Dahlstrom, Claudia Hallock, and Steve Wright (ISU)	1980
Survey Report #3, Smoky Canyon Project. Caribou N. F. (CRM-CB-110)	Druss, Claudia and Steven Wright (Basin and Range Research)	1981
Archaeological Survey, 161 KV Transmission Line, Smoky Canyon Area (CRM-CB-124)	Druss, Mark	1982
Cultural Resource Inventory of the Smoky Canyon Mine Lease	McGuire, David	1982
Archaeological Investigations in Eastern Idaho: Lower Valley Power and Light Tincup Loop Transmission Line Cultural Resource Survey	Walker, Danny	1982
Diamond Creek GIS Area (CB-91-0218)	Christensen, B.	1991
Crow Creek Fish Habitat Improvement	Hendrikson, N. (ISU)	1991
Manning Creek Drilling Project (CB-92-262)	Hamilton, J. (USFS)	1992
Diamond Creek GIS Update (CB-93-306)	Robertson, M.	1993
North and Upper Manning Timber Sale (CB-93-307)	Robertson, Mary (USFS)	1993
South Fork Sage Creek Timber Sale (CB-94-337)	Robertson, Mary (USFS)	1994
Freeman Ridge Phosphate Exploration	Robertson, M. (USFS)	1994
Wells Canyon/Deer Creek Exploration Federal Lease I-01441	Robertson, M. (USFS)	1996
Manning Creek Exploration Plan Modification (CB-94-333)	Satter, Norris (BLM)	1994
Galland Special Use Permit Pipeline	Robertson, M. (USFS)	1996
JR Simplot Panel B Exploration, Extension of 1996 Req. (CB-97-432)	Robertson, Mary	1997
Sage Valley Phosphate Exploration, Lease I-31982 (CB-98-455)	Cresswell, L. (BLM)	1997a
Simplot Phosphate Prospecting Permit	Cresswell, L. (BLM)	1997b
JR Simplot Federal Phosphate Lease I-30369 Modification. Caribou N.F. (CB-97-433)	Robertson, Mary	1997
A Cultural Resource Inventory of 880 Acres of the Manning Creek Property, Caribou County, Idaho (CB-00-527)	Penner, William and Richard Crosland (JBR)	2001*
Smoky Canyon Panels B and C (CB-01-530)	Gray, D. (Frontier Historical Consultants)	2001
Wells Canyon Phosphate Exploration. (CB-02-5)	Parvey, M. and K. Jewel (Northwestern Archaeological Associates)	2002
Baseline Technical Report for Cultural Resources, South Manning Creek Exploration Area, Caribou County, Idaho	Statham, William (Frontier Historical Consultants)	2003*

PROJECT DESCRIPTION	AUTHOR	YEAR
Baseline Technical Report for Cultural Resources, Deer and Manning Creek Phosphate Lease Areas, Smoky Canyon Mine, Caribou County, Idaho (CB-04-495)	Gray, Dale, Dawn S. Statham, and William P. Statham (Frontier Historical Consultants)	2003*
South Manning Creek Exploration Area (CB-03-554)	Gray, Dale	2004
Addendum to Baseline Technical Report for Cultural Resources, Panels F and G Extension and Transportation Corridors, Smoky Canyon Mine, Caribou County, Idaho (CB-04-495)	Gray, Dale and William P. Statham (Frontier Historical Consultants)	2004*
Addendum B to Baseline Technical Report for Cultural Resources, Panels F and G Extension and Transportation Corridors, Smoky Canyon Mine, Caribou County, Idaho (CB-04-495)	Gray, Dale and William P. Statham (Frontier Historical Consultants)	2005*
Peterson Ranches Inc., Livestock Corral, Caribou County (NRCS-08-7192)	Vrem, Darin (NRCS)	2008
Montpelier 4 Allotments Management Plan, Caribou N. F. (CB-10-601)	Hall, D.	2010
Soda Springs Allotments Management Plan. Caribou N. F. (CB-10-603)	Hall, D.	2010
An Intensive Level Cultural Resource Survey for the Proposed J. R. Simplot Panel G East Overburden Disposal Expansion Area, Caribou County, Idaho	John R. Rasmussen and Michael R. Polk (Sagebrush Consultants, Inc.)	2012a**
An Intensive Level Cultural Resource Survey for the Proposed J. R. Simplot Smoky Canyon Conveyor System, Caribou County, Idaho	John R. Rasmussen and Michael R. Polk (Sagebrush Consultants, Inc.)	2012b**
Evaluation of Arborglyph Sites Near the Proposed Panel G West Haul/Access Road for J.R. Simplot Company's Smoky Canyon Mine, Caribou County, Idaho	Ann Swanson Polk and Sandy Chynoweth Pagano (Sagebrush Consultants, Inc.)	2013*
An Intensive Level Cultural Resource Survey for the Proposed J. R. Simplot Smoky Canyon Mine Stormwater Control Features, Caribou County, Idaho	John R. Rasmussen and Michael R. Polk (Sagebrush Consultants, Inc.)	2013**

*Specific to 2007 FEIS and 2008 RODs

**Specific to Project

3.14.1.2 Cultural Resource Sites

As a result of the Project-specific cultural resource inventories, three historic sites were identified within the Project Area. No prehistoric sites were encountered during the inventories. The three historic sites have been evaluated as not eligible for the National Register of Historic Places (NRHP) (**Table 3.14-2**), and the SHPO concurred with this determination. Site CB-342 was previously determined as unevaluated in the 2007 FEIS and so required additional field recordation and evaluation; the current evaluation (Polk and Pagano 2013) determined that the site is not eligible for the NRHP.

Table 3.14-2 Cultural Resource Sites in the Project Area

SITE NUMBER	SITE TYPE	AFFILIATION	NRHP EVALUATION
CB-342	Arborglyph Site	Euro-American	Not Eligible
CB-525	Road	Euro-American	Not Eligible
CB-593	Stock Drive	Euro-American	Not Eligible

Cultural resource sites that have been determined to be not eligible for the NRHP do not need further protection, and therefore, would not need to be avoided by the Project.

No traditional cultural properties or sacred sites have been designated or defined in or adjacent to the Project Area.

3.14.1.3 Heritage Resources

Southeastern Idaho has been traditionally utilized by the Shoshone-Bannock Tribes for subsistence and ceremonial uses. The Fort Bridger Treaty of 1868 reserved the Tribes' rights to hunt, gather, and fish on all unoccupied federal lands (see **Section 3.15**). Physical remains of prehistoric lifeways on the CTNF include campsites and associated artifacts (USFS 2003a). During consultation on the 2007 FEIS, the Shoshone-Bannock Tribes stated that the general areas within and adjacent to the original Panels F and G Project, which includes the Project Area, are currently used for traditional activities such as hunting, gathering, and ceremonial uses. According to the RFP (USFS 2003a), representations of historic lifeways on the forest include wagon trails, homesteads, mining sites, and Civilian Conservation Corps camps.

Heritage resources in or adjacent to Project Area also include the historic uses of livestock trailing and grazing. This is in part evidenced in the numerous arborglyphs (tree carvings) present in and around the Project Area, as well as the stock drive (CB-593). Grazing availability and allotments in the Project Area are described in **Section 3.10**. Roads and trails in the Project Area are described in **Section 3.16** (Transportation) and **3.11** (Recreation and Land Use), respectively.

3.15 NATIVE AMERICAN CONCERNS AND TREATY RIGHTS RESOURCES

3.15.1 2007 FEIS Affected Environment

This section is tiered to Section 3.14 of the 2007 FEIS, titled Native American Concerns and Treaty Rights Resources (pages 3-208 through 3-215), and applicable information is hereby incorporated by reference. The following sections contain a summary of the referenced information, as well as new information specific to the Project.

3.15.1.1 Indian Treaty Rights

The federal government has federal trust responsibilities to Native American Tribes (DOI 1995). As discussed in **Chapter 1**, the 1868 Fort Bridger Treaty between the U.S. and the Shoshone and Bannock Tribes reserves the Tribes' right to continue traditional activities on all unoccupied federal lands. The Tribes advocate the preservation of harvest opportunity on culturally

significant resources necessary to fulfill inherent, traditional, and contemporary Treaty Rights (Shoshone-Bannock 1994). The Project Area is within the portion of southeast Idaho that is of historical usage for hunting and gathering (Shoshone-Bannock 2003) and continues to retain cultural values.

Article 4 of the 1868 Treaty states, "The Indians herein named…shall have the right to hunt on the unoccupied land of the U.S. so long as game may be found thereon…" While the Treaty itself only specifies hunting, the lawsuit "State of Idaho v. Tinno" established that any rights not specifically given up in the Treaty were, in fact, reserved by the Tribes. Further, in the Shoshone language, the same verb is used for hunt, fish, and gather so it is assumed that the Tribes' expect to retain rights for all of those practices (from a presentation by the Shoshone-Bannock Tribes, 1868 Fort Bridger Treaty Rights Seminar: April 12-13, 2004).

The Tribes' Fish and Game Department regulates and enforces the 1975 Tribal Fish and Game Code for all off-reservation hunting and fishing activities. The federal agencies recognize that the Tribes regulate their own tribal members for hunting and do not require tribal members to secure state hunting permits to hunt on BLM or USFS lands.

Tribal grazing rights outside the Fort Hall Reservation only exist in areas ceded to the federal government. As stated in Article IV of the Agreement of February 5, 1898 (31Stat. 674, 15 Stat. 673), between the U.S. and the Shoshone-Bannock Tribes, ratified by the Act of June 6, 1900: "So long as any of the lands ceded, granted and relinquished under this treaty remain part of the public domain, Indians belonging to the above-mentioned Shoshone-Bannock tribes, and living on the reduced Fort Hall reservation, shall have the right, without any charge therefore, to cut timber for their own use, but not for sale and to pasture their livestock on said public lands, and to hunt thereon and to fish in the streams thereof." None of these ceded areas are within the Project Area; therefore tribal grazing rights are not affected by the Project. In 2002, an MOU was signed by BLM and the Fort Hall Business Council of the Shoshone-Bannock Tribes regarding the recognition of tribal grazing rights on public land within the ceded land boundary established by the Agreement of February 5, 1898 (31Stat. 674, 15 Stat. 673), between the U.S. and the Shoshone-Bannock Tribes, ratified by the Act of June 6, 1900.

In regard to federal trust responsibilities, known items of interest to the Tribes include:

Tribal Historical/Archaeological Sites

Project-specific cultural resource inventories have been conducted in the Project Area. This information is in **Section 3.14** (Cultural Resources). No prehistoric archaeological sites were located within Project boundaries during the inventories.

Rock Art

No resources of this nature have been identified in the Project Area.

Sacred Sites (EO 13007)/Traditional Cultural Properties (NHPA)

Executive Order (EO) 13007 directs federal land-managing agencies to accommodate Native Americans' use of sacred sites for religious purposes and to avoid adversely affecting the physical integrity of sacred sites. Federal agencies managing lands must implement procedures to ensure reasonable notice where an agency's action may restrict ceremonial use of a sacred site or adversely affect its physical integrity. No sacred sites have been identified in the Project Area.

A traditional cultural property, as defined in the National Historic Preservation Act (NHPA) of 1966, is defined as a property that is eligible for inclusion on the NRHP "because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and are important in maintaining the continuing cultural identity of the community" (Parker and King 1998). Stated another way, a significant traditional cultural property is defined as a property with "significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices" (Parker and King 1998). No traditional cultural properties have been nominated or designated in the Project Area.

Traditional Use Sites

Traditional use sites are those historically used by tribes for traditional land uses including fishing, hunting, gathering, ceremonies, and religious practices. Few traditional use sites have been documented through consultation with the Tribes, as tribal information regarding these sites is closely guarded. The Tribes have not disclosed specific details of traditional use in the Project Area; however, they have asserted that the area is significant, traditionally used, and retains cultural values (BLM and USFS 2007).

Water Quality

The Project Area includes lands within the Tygee Creek and Crow Creek watersheds. A detailed discussion of water resources is located in **Section 3.4** of this EIS.

Wetlands

Wetlands were identified near but not in the Project Area. See **Section 3.7** for a detailed discussion of those wetland resources.

Fisheries

The Tribes have not designated any specific traditional fishing areas on the CTNF but the whole forest is used for exercising fishing rights. However, as discussed under Fisheries and Aquatics resources in **Section 3.9** of this EIS, there are no fish-bearing streams within the Project Area that would be impacted.

Vegetation

Specific information regarding vegetation in the Project Area can be found in **Section 3.6**. Access to traditional plant resources is protected under the Fort Bridger Treaty of 1868. The Tribes have indicated that certain plants are important for traditional uses including, but not limited to, chokecherry, elderberry, current, red-twig dogwood (red willow), tulles, onions, turnips, all water plants (such as mint and watercress), huckleberry, gooseberry, raspberry, strawberry, sweet sage, carrots, bitterroot, camas, aspen, juniper, and lodge pole pine. Many of these plant species are present in the Project Area.

The Tribes use specific sizes of lodgepole pine trees for tipi poles. Vegetation in the Project Area includes the subalpine fir community and the aspen/conifer community, both of which contain lodgepole pine.

Noxious Weeds and Invasive Species

There is tribal concern about non-native vegetation replacing native vegetation (BLM and USFS 2007). See the Vegetation **Section 3.6** for discussion on noxious weeds and invasive species.

Wildlife

Detailed information regarding the wildlife in the Project Area can be found in **Section 3.8**. Big game wildlife important for tribal hunting includes elk, deer, antelope, and moose. Small game important for tribal hunting includes sharp-tailed grouse, sage-grouse, rabbits, rockchucks (marmots), squirrels, and partridges. Eagle, wolves, and grizzlies are also of concern to the Tribes.

Grizzly bear, antelope, and partridge are likely absent from the Project Area.

Bald eagles have been observed in the vicinity of the Project Area. Sharp-tailed grouse may be present in suitable or marginally suitable habitat year-round, and sagebrush-covered hillsides provide suitable habitat for sage-grouse in the Project Area.

The Project Area provides both suitable habitat and prey base for wolves; any habitat in the Project Area could provide year-round movement routes for wolves. Mule deer, elk, and moose roam through most of the Project Area year-round.

Land Access/Transportation

Currently motorized access to the Project Area is via the Crow Creek Road (Forest Road (FR) 111), Wells Canyon Road (FR 146), Smoky Canyon/Timber Creek Road (FR 110), and Diamond Creek Road (FR 1102).

Although there is one designated 4-wheel drive/Off Highway Vehicle (OHV) road through Panel G, there are no roads or trails the Project Area. The area can also be accessed by horse and foot with few or no areas of restriction. Additional information regarding access into the Project Area can be found in **Section 3.11**, Land Use and Recreation, and **Section 3.16** Transportation.

Treaty Rights Access

The Tribes are concerned with retaining access on unoccupied federal lands in order to exercise Tribal Treaty Rights. As stated in the 2007 FEIS, the Tribes assert their responsibility to preserve their Treaty Rights for future use of lands to ensure future opportunity, and therefore it is tribal policy to "promote the conservation, protection, restoration, and enhancement of natural resources."

According to the Tribes, "access" to exercise Treaty Rights goes beyond the concept of simple entry into the Project Area by vehicle or foot. "Access" also includes continued availability of the traditional natural resources in an area. Therefore, the tribal interpretation of loss of access extends to the exclusion, limitation, or unavailability of the traditional resources due to mining disturbance and road construction. It would also presumably apply to the displacement of wildlife in those areas.

Recreation

Most recreation in the Project Area is dispersed (no improvements). There are no developed recreation amenities. ROS categories within the Project Area are SPM and RM (see **Section 3.11**). The dominant type of dispersed recreation is hunting for elk, moose, and deer.

As discussed previously, tribal hunting and gathering rights as reserved by the 1868 Treaty need no state regulations or permits to be exercised by tribal members. The Tribes' Fish and Game Department regulates and enforces the Tribal Fish and Game Code for all off-reservation hunting and fishing activities. Federal agencies recognize that the Tribes regulate their own tribal members for hunting, and do not require tribal members to secure state hunting or fishing permits on BLM or USFS lands.

Land Status

The Project Area is administered by the CTNF and portions are considered unoccupied federal lands; therefore, it is available for Treaty Rights use as stated in the Fort Bridger Treaty of 1868. These rights include hunting, fishing, gathering, and other practices such as trade. The tribal concern is that changes in land status can diminish the locations at which the Tribes can exercise Treaty Rights, thus forcing tribal members to relocate these activities to other areas or cease to exercise Treaty Rights on specific areas. It is the Shoshone Bannock Tribes' concern that the transfer or purchase of federal lands, and the extension of leases for mining on federal lands by private businesses enable them to control access and use, which jeopardizes access to certain Shoshone-Bannock traditional fishing, hunting, and gathering areas, as well as grazing and timber use (Shoshone-Bannock 2005).

Air Quality

Specific data regarding air resources is located in **Section 3.3** of this EIS. All lands within the Project Area have been designated Class II for NAAQS. The air quality in the vicinity of the Smoky Canyon Mine is good to excellent because of the site's remote location, and relatively limited industrial activity in the area. Air quality in the Project Area is designated as in attainment or unclassifiable for all NAAQS and Idaho Ambient Air Quality Standards.

Socioeconomics and Environmental Justice

See **Sections 3.17** and **3.18**, respectively, for data regarding socioeconomics and environmental justice (EO 12898).

EO12898 Section 4-4 directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife. The affected environment for wildlife and fish can be found in **Sections 3.8** and **3.9**, respectively.

3.15.1.2 Consultation

Native American coordination and consultation began with a Project briefing from the BLM staff to Shoshone-Bannock tribal technical staff on February 20, 2013. A scoping letter was sent to the Chairman of the Fort Hall Business Council of the Shoshone-Bannock Tribes on June 24, 2013. A follow-up public meeting was held at the Shoshone-Bannock Hotel Event Center on the Fort Hall Reservation July 12, 2013. A second Project briefing to Shoshone-Bannock tribal technical staff occurred on December 2, 2013. Government to government consultation was conducted with the Fort Hall Business Council of the Shoshone-Bannock Tribes, BLM, and FS on January 23, 2014. Communications to date are summarized in **Table 3.15-1**.

Project briefings, meetings, and other verbal and written communications will be utilized to keep the Tribes apprised of the Project. Consultation with the Tribes will be on-going throughout the EIS process.

Table 3.15-1 Summary of Communications

COMMUNICATION TYPE	PARTIES INVOLVED	DATE
Staff to Staff Briefing	Shoshone-Bannock Tribal Technical Staff, BLM, and USFS	February 20, 2013
Scoping Letter	To Shoshone-Bannock Tribes from BLM and USFS	June 24, 2013
Public Meeting at Fort Hall Reservation	Shoshone-Bannock Tribes, BLM, and USFS	July 12, 2013
Staff to Staff Briefing	Shoshone-Bannock Tribal Technical Staff, BLM, and USFS	December 2, 2013
Government to Government Consultation	Fort Hall Business Council of the Shoshone-Bannock Tribes, BLM, and FS	January 23, 2014

3.16 TRANSPORTATION

3.16.1 2007 FEIS Affected Environment

This section is tiered to Section 3.15 of the 2007 FEIS, titled Transportation (pages 3-215 through 3-216), and applicable information is hereby incorporated by reference. No new baseline information was collected or deemed necessary for this Project. The following summary of the referenced information is specific to the Project.

There are no public roads or motorized trails within the Project Area. The mine haul road between Panels F and G was approved by the 2008 RODs and is currently being constructed. The existing haul road between Panel F and the mill, along which the ore conveyor system would follow, is not publicly accessible.

3.17 SOCIAL AND ECONOMIC RESOURCES

3.17.1 2007 FEIS Affected Environment

This section is tiered to Section 3.16 of the 2007 FEIS, titled Social and Economic Resources (pages 3-217 through 3-249), and applicable information is hereby incorporated by reference. The following summary of the referenced information and updated information is specific to the Project. Although information presented in the 2007 FEIS has likely changed to some degree, according to Simplot, the Project would not result in changes to the overall employment at the Smoky Canyon Mine and/or within the adjacent counties, thus social and economic data presented in the 2007 FEIS was not updated or revised for this EIS.

3.17.1.1 Land Ownership

The areas directly affected by the Smoky Canyon Mine are primarily Bannock, Caribou, and Power counties in southeastern Idaho; and Lincoln County in southwestern Wyoming. These four counties are contiguous, with Power County, Idaho being the farthest west and Lincoln County, Wyoming being the farthest east. Bannock and Power Counties, Idaho, comprise the Pocatello, Idaho Metropolitan Area as defined by the Office of Management and Budget. The other two subject counties are not part of any metropolitan statistical area. Power County has the

highest percentage of privately-owned land of the four counties. The U.S. government is a significant landowner in all four counties (**Table 3.17-1**). Lincoln County is the largest of the three counties and is over three times as large as Bannock County, the smallest of the four.

Table 3.17-1 Land Ownership

DESCRIPTION	BANNOCK COUNTY, ID	CARIBOU COUNTY, ID	POWER COUNTY, ID	LINCOLN COUNTY, WY
Acres	712,448	1,130,304	899,648	2,729,157
Federal	31.1%	39.6%	33.4%	71.6%
State	6.7%	10%	3.0%	7.6%
City and County	1.7%	0.2%	0.4%	0.0%
Private	60.6%	50.2%	63.2%	20.8%

Sources: Idaho Department of Commerce 2013; Wyoming State Almanac 2002

3.18 ENVIRONMENTAL JUSTICE

3.18.1 2007 FEIS Affected Environment

This section is tiered to Section 3.17 of the 2007 FEIS, titled Environmental Justice (pages 3-249 through 3-250), and applicable information is hereby incorporated by reference. The following summary of the referenced information is specific to the Project.

The communities in closest proximity to the Smoky Canyon Mine include Afton and Fairview, Wyoming, and a loose community of ranchers along Crow Creek Road. In general, the area is rural. USFS (2003b) of the 2007 FEIS notes: "few minorities reside within the Study Area, and no communities are considered low income. While there are individual households that are either minority or low income, the communities as a whole are not." Also, see Social and Economic Resources, Section 3.16 of the 2007 FEIS.

As described in **Section 3.15**, members of the Shoshone-Bannock Tribe, based in Fort Hall, Idaho, have reserved Treaty Rights to utilize federal lands in the Project Area for hunting, fishing, and gathering. The Shoshone-Bannock Tribes represent both a population (readily identifiable collection of persons) and a community (readily identifiable social group who reside in a specific locality, share government, and have a common cultural and historical heritage) that could be affected under Environmental Justice. Government to government consultation with the Shoshone-Bannock Tribes' Fort Hall Business Council is an ongoing aspect of this Project (see **Sections 3.15.1.2 and 4.15**). According to the Shoshone-Bannock, the Tribes currently utilize the Project Area on a regular basis to exercise their Treaty Rights including hunting, fishing, gathering, and ceremonial or traditional activities (BLM and USFS 2007).

This page intentionally left blank.